February 2026

9th Edition

SWR Magazine 1:1

ISSN: 3068-7233

FROM AMATEUR SATELLITES

TO THE FIRST HUMAN VOICES

QRP MASTERY

KEYS TO SUCCESSFUL PORTABLE OPERATION

KP5

THE STORY BEHIND A DXPEDITION

When the QSO No Longer Speaks

REFLECTIONS ON FT8 AND AMATEUR RADIO

EXPLORING 10 GHZ

MICROWAVES FOR THE HAM RADIO OPERATOR

www.swrmagazine.org

Introduction

On the cover

Delia, known on the air as XE1DEL, embodies the most human essence of amateur radio: the thrill of hearing a distant voice and turning it into a bridge between cultures, countries, and hearts. From Mexico, her introduction to radio was not just the start of a new hobby, but the awakening of a passion that unites technology, curiosity, and a spirit of service. Every CQ call she makes is an open invitation to the world, a testament to perseverance and love for an art that continues to thrive thanks to people like her.

On the cover of this February edition, Delia appears smiling in front of her radio equipment, a picture that conveys calm, joy, and purpose. Her gaze reflects the pride of having achieved a goal and the excitement of continuing to grow on this fascinating journey. This photograph not only portrays an amateur radio operator but also a woman who inspires, reminding us that radio remains a space where dreams travel in the form of waves, and where every operator has the power to leave an invisible yet lasting mark on the air.

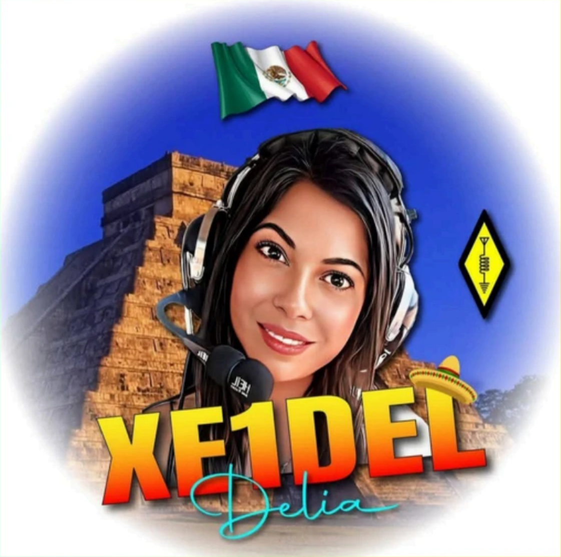

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Photo by: reddit.com

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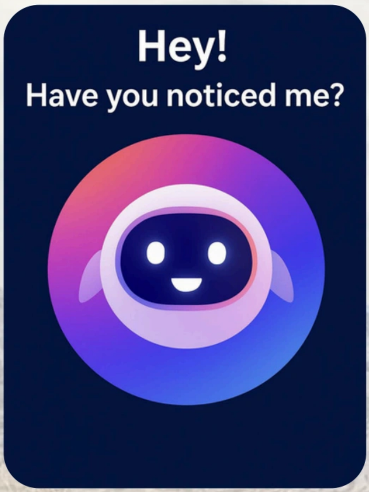
Hey!
Have you noticed me?

Have you noticed this icon in SWR Magazine?

Look for it in the lower-right corner of every edition! It’s our AI Chatbot: an interactive tool designed to help you explore our content. Ask it any question and get accurate answers instantly, based directly on what you’re reading. Give it a try!

Autotuner
HEIL

Foto de: W0DSB

EDITORIAL

SWR MAGAZINE: A FREE SIGNAL MAKING HISTORY

Photo by: VY2NX

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SWR Magazine was born as a simple idea, yet full of purpose: to share amateur radio without barriers, costs, or borders. Today, that idea has become a strong and clear signal that crosses continents, languages, and cultures. Every day, new subscribers join this global community that believes in the value of shared knowledge, the passion for radio, and the power of a voice traveling through the ether to connect people who may never meet, yet recognize each other as part of the same brotherhood.

We are proudly the only amateur radio magazine published in two languages, and we do it completely free of charge, because we understand that amateur radio is about service, continuous learning, and legacy. In a world where almost everything has a price, SWR Magazine stands for free access to quality content, education, inspiration, and collective growth. We don't sell a magazine; we share a vision and a responsibility with the community that trusts us.

February marks a historic moment in our journey. For the first time, SWR Magazine will be present at HamCation in Orlando, Florida one of the most important and iconic events in amateur radio worldwide. You'll find us in the North Building, Stand #185, not just with a table and a logo, but with stories, dreams, and a commitment to represent a community that believes things can still be done differently. We're here to listen, to learn, and to show that an independent, free, bilingual magazine can occupy a significant space on the international stage.

We are breaking barriers. We are making history. And we are doing it without charging a single cent, driven solely by passion, the ethics of amateur radio, and a genuine desire to serve. SWR Magazine reflects an amateur radio community that is alive, supportive, and visionary. Thank you for being part of this growing signal, thank you for believing, and thank you for joining us on this journey that is just beginning.

Photo by: WB1CLT

WORLD NEWS

HAM RADIO FRIEDRICHSHAFEN 2026

The most important international exhibition for amateur radio in Europe is scheduled for June 26–28, 2026, in Friedrichshafen, Germany, bringing together enthusiasts, clubs, manufacturers, and experts from over 50 countries.

This annual event provides a space to explore the latest innovations in radio equipment, antennas, and communication technologies, as well as an opportunity for operators to share experiences, participate in workshops, and connect with the global amateur radio community. With more than 380 exhibitors and thousands of expected visitors, HAM RADIO continues to establish itself as a key venue for spotting trends, discussing new techniques, and strengthening cooperation among clubs and amateurs worldwide.

Mark your calendar: June 26–28, 2026—Friedrichshafen will be the epicenter of the hobby in Europe!

ARRL DECLARES 2026 AS THE “YEAR OF THE CLUB” TO CELEBRATE AMATEUR RADIO CLUBS

WELLESLEY AMATEUR RADIO SOCIETY W1TKZ
COMMUNICATIONS BY AMATEUR RADIO

Photo by: ARRL

The American Radio Relay League (ARRL) has designated 2026 as the “Year of the Club,” an initiative to celebrate and strengthen amateur radio clubs, which are considered the backbone of the hobby. Clubs provide a space to learn, operate, build projects, and foster community, often serving as the first point of contact for new operators.

Throughout the year, the ARRL will promote special programs, operating events, and contests that recognize club achievements, encourage member participation, and support the expansion of activities worldwide. Initiatives include contests for club newsletters and websites, with awards and recognition presented during the ARRL National Convention.

In addition, a redesigned club website has been launched, centralizing resources, club locations, and support tools to strengthen the global amateur radio network. The campaign invites all operators to actively participate, celebrate their clubs’ achievements, and share their passion for amateur radio.

For more information: arrl.org

WORLD NEWS

KENYA TO HOST THE ARISS PROGRAM IN 2026

Kenya has been selected to participate in the ARISS (Amateur Radio on the International Space Station) program in 2026, becoming the only African country chosen for that year. The initiative will allow students and amateur radio operators to make live contacts with astronauts aboard the International Space Station, promoting STEM education and interest in space science through amateur radio. The project will be supported by the Kenya Space Agency and international mentors to ensure the technical and educational success of the communications. This experience aims to inspire new generations and strengthen Africa's presence in space communications.

KSA
KENYA SPACE AGENCY
KENYA SPACE AGENCY

THE RADIO CLUB LOS MOLINOS OF VILLA ALEMANA ANNOUNCES NEW CRITERIA FOR ITS AWARDS.

CE2CQ
RADIO CLUB LOS MOLINOS
VILLA ALEMANA
DIPLOMA

The Radio Club Los Molinos of Villa Alemana (CE2CQ) has announced new rules for its annual awards, in the context of its upcoming anniversary month. The initiative aims to promote telegraphy (CW), recognize technical excellence, and highlight the spirit of fellowship and support for new generations of amateur radio operators.

In CW, two awards have been established:

- Víctor Mena Zamora (CE2GLR): for Chilean radio amateurs who achieve 500 CW contacts during the year.
- Nelson Atienza Hormazábal (CE2ILI): aimed at Beginners and Novices, with 100 CW contacts.

Applications are accepted until the end of September, submitting logs and QSL/eQSL confirmations to the club's email.

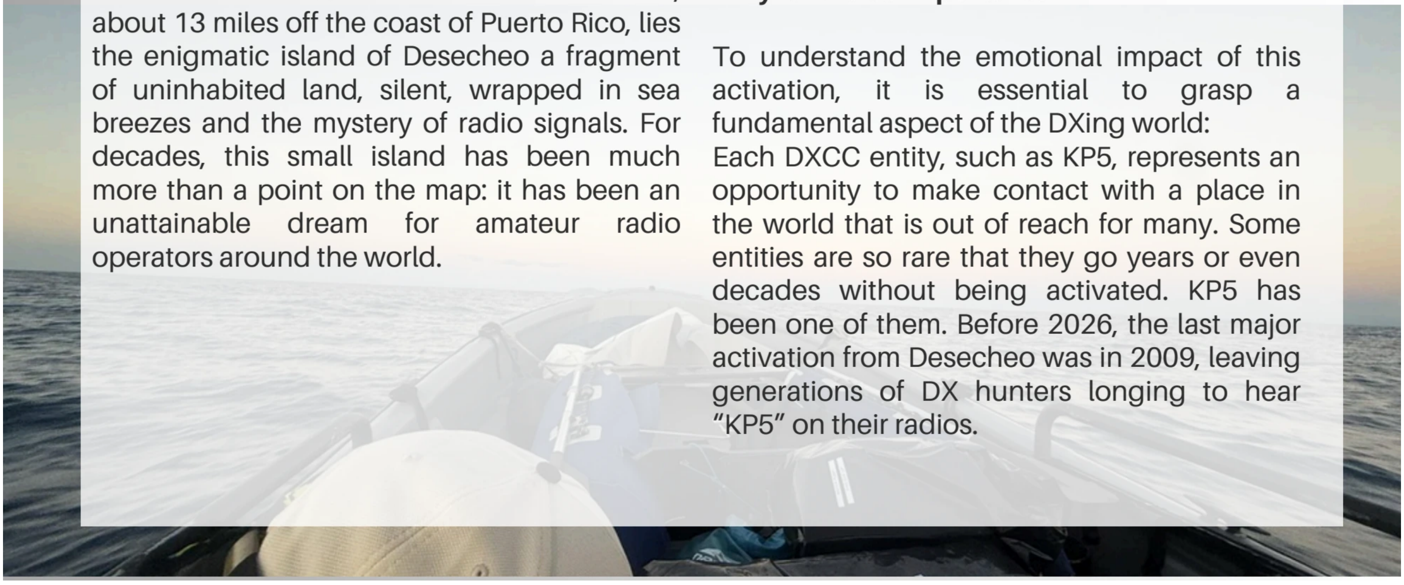
Additionally, recognitions will be awarded for merit and fellowship:

- Juan Carlos Muñoz Sepúlveda (CE2GQM): for those who stand out for their cooperation with the club.
- Marcelo Dragas Flores (CE2VDQ): for members who promote amateur radio among young people, supported by photographic evidence.

The awards will be presented during the Anniversary Month ceremony, reinforcing the club's commitment to technical skill, camaraderie, and the future of amateur radio.

KP5 – THE STORY BEHIND A DXPEDITION THAT MOVES THE AMATEUR RADIO WORLD

By: Jose M. Candelaria NP4ET



In the most remote corners of the Caribbean, about 13 miles off the coast of Puerto Rico, lies the enigmatic island of Desecheo a fragment of uninhabited land, silent, wrapped in sea breezes and the mystery of radio signals. For decades, this small island has been much more than a point on the map: it has been an unattainable dream for amateur radio operators around the world.

Why is KP5 so important?

To understand the emotional impact of this activation, it is essential to grasp a fundamental aspect of the DXing world:
Each DXCC entity, such as KP5, represents an opportunity to make contact with a place in the world that is out of reach for many. Some entities are so rare that they go years or even decades without being activated. KP5 has been one of them. Before 2026, the last major activation from Desecheo was in 2009, leaving generations of DX hunters longing to hear "KP5" on their radios.

The Global Wait

Imagine sitting at your station: the sun is setting, the noise on the bands is fading, and you hear your colleagues on other continents murmuring about KP5. They are adjusting antennas, checking propagation forecasts, marking schedules in their logs, calculating the best time to catch that long-awaited call.
That is the excitement that has accompanied this activation not just a routine CQ call, but the chance for an ATNO (All-Time New One) for many operators, an achievement that countless enthusiasts have waited for years.

A Modern Approach: Technology and Tradition

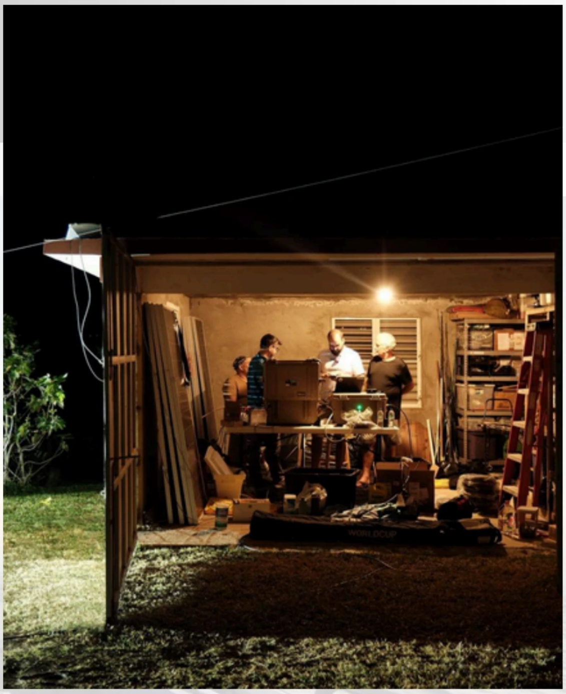
What sets this KP5/NP3VI DXpedition apart is its blend of technological innovation and the classic spirit of amateur radio. In collaboration with the Vieques Island Amateur Radio Club (NP3VI) and the Manyana DX Foundation, the team has deployed autonomous Remote Deployment Units (RDUs) designed to provide continuous 24-hour operation, even under challenging conditions or without a constant operator presence on-site.

In many ways, this approach mirrors the evolution of our hobby: honoring the legacy while embracing modern tools that keep alive the magic of connecting worlds through invisible waves.

A Historic Moment

The activation was planned for a window from January 12 to 14, 2026, and is scheduled to operate for approximately 30 continuous days, covering bands, modes, and time zones to provide maximum contact opportunities.

Most significantly, it is the first DXpedition to Desecheo led by Puerto Rican amateur radio operators in nearly 50 years a source of pride both locally and internationally.



The Community in Waiting

For operators around the world, the mere possibility of seeing "KP5/NP3VI" on the waterfall display or completing that dream QSO has become a daily topic of conversation. In forums, on the bands, and at club meetings, preparation and anticipation have been central to the experience of this long-awaited event.

It's not just about making contacts it's about shared passion, cultivated patience, and the joy of participating in something bigger than oneself. Even if you weren't directly part of the DXpedition, you share a story that many have lived quietly: adjusting antennas in the rain, checking propagation forecasts, and marking calendars with hope.

What It Means for Amateur Radio

Beyond the numbers and confirmations, this type of activation feeds the soul of the amateur radio operator:

- Connecting Generations: From veterans who remember long waits to young operators dreaming of their first ATNO.
- Fostering Community: Enthusiasts from all continents sharing experiences, "spots," strategies, and excitement.
- Inspiring Innovation: By combining modern technology with tradition, it redefines how DXpeditions are conducted in the 21st century.

In a world where distances seem to shrink, KP5 reminds us that there are still places that spark fascination, challenge, and joy—all thanks to one simple thing: a radio signal.

When a Signal Connects the World

KP5 was more than just an activation from a remote island. It was a call to the heart of amateur radio. For days, thousands of operators around the world shared the same excitement: the waiting, the attentive listening, the hope for a contact that might last only a few seconds, but would be remembered forever.

Even though many of us will never set foot on Desecheo, we were all there in some way: in front of our radios, adjusting antennas, watching the waterfall, believing once again in the invisible power of radio waves. KP5 reminded us that amateur radio is not measured solely by confirmed entities or diplomas hanging on the wall, but by shared passion, cultivated patience, and the human connection that arises when a signal crosses oceans.

In the end, every DXpedition like KP5 reaffirms a simple yet profound truth: as long as there is someone willing to listen and someone willing to transmit, amateur radio will continue to thrive, connecting the world signal by signal, story by story.

Photos by: Desecheo 2026 Dxpedition

Photo by: pd5dj.nl

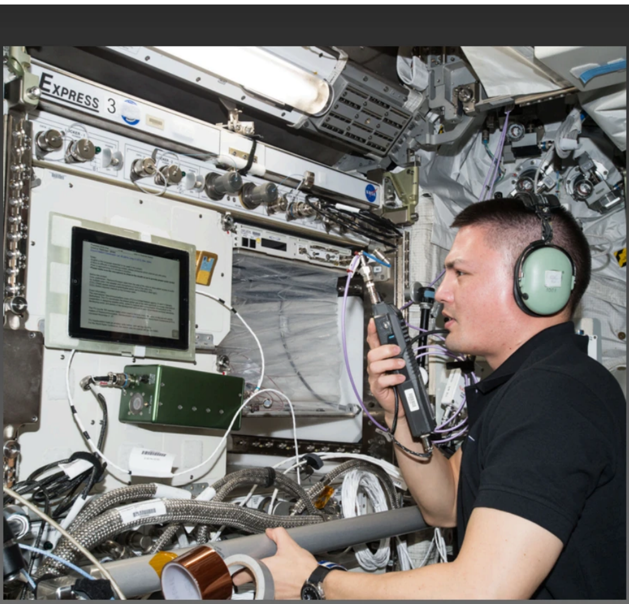
From Amateur Satellites to the First Human Voices (Part 1 of a Series)

By: Juan Montijo WP4OV

The fascination with communicating with objects orbiting the Earth began long before an astronaut responded to a call from space. In fact, the story of amateur radio in space started thanks to the vision and ingenuity of the radio amateurs themselves.

In 1961, a group of radio amateurs achieved something unthinkable at the time: launching OSCAR-1, the first satellite built and operated by amateurs. Its function was simple transmitting a beacon but its impact was enormous. During its weeks of operation, thousands of stations around the world received its signal, proving that space was not reserved exclusively for governments or large agencies.

These first amateur satellites not only tested technical feasibility. They also introduced concepts that are now routine for any satellite operator: orbital tracking, limited time windows, line-of-sight propagation, and Doppler effect correction. More importantly, they established an idea that would shape the future: amateur radio could actively participate in space exploration.



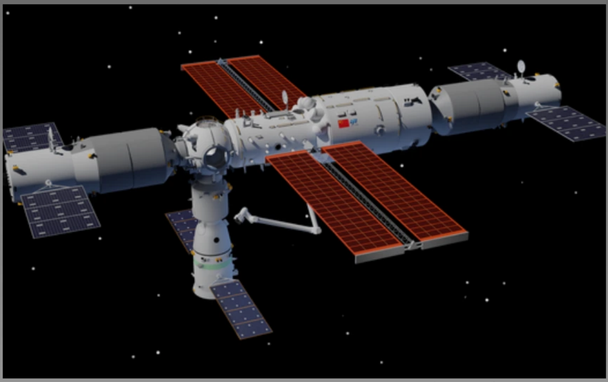


Photo by: Amsat

The next major step came in 1983, when astronaut and radio amateur Owen Garriott, W5LFL, made amateur radio contacts from the Space Shuttle Columbia during the STS-9 mission. For the first time, radio amateurs on the ground could speak directly with a person in orbit. These contacts, made during the crew's free time, sparked amazement and excitement throughout the global community.

Beyond the technical achievement, these communications sparked something even more important: educational interest. Students could hear how a simple station could connect with space, breaking the perception that space exploration was distant or unattainable. Unknowingly, these early contacts laid the groundwork for what would soon become a powerful educational and scientific outreach tool.

In the next installment, we will see how these experiences evolved into formal programs and how amateur radio transitioned from a space curiosity to a global educational mission.

By: SWR Editorial Team

Photos and Information by: DX News

DXpeditions

DXpeditions are more than just a contact on the air; they are adventures that take us to remote places, connect us with people from different cultures, and teach us patience, perseverance, and humility. Each QSO is a reminder that, through the waves, the world becomes a little smaller, and our passion for amateur radio unites us beyond borders and oceans.

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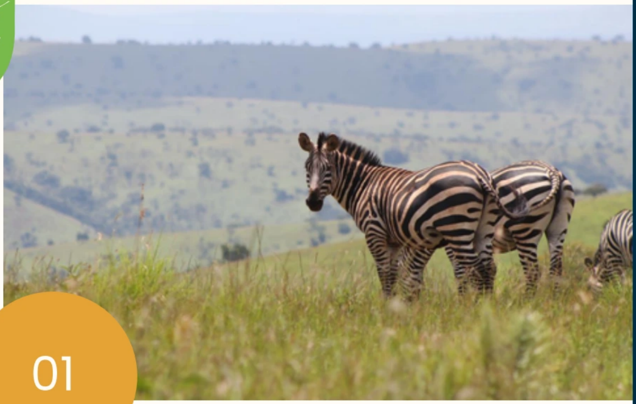


01

The Republic of Rwanda is a small country in the eastern part of the African continent, bordering Congo, Uganda, Tanzania, and Burundi. Rwanda does not stand out much among African countries in terms of economic development. However, despite having a predominantly agricultural sector and slow urbanization, Rwanda has experienced significant economic growth in recent years. This colorful and distinctive country attracts the attention of tourists, especially those interested in safaris. Today, Rwanda is considered one of the most sought-after and authentic destinations in East Africa, largely due to its relatively stable position compared to the surrounding countries.

01.

9X2AW Rwanda

Harold, DF2WO, will be active again as 9X2AW from Rwanda, starting January 22, 2026.

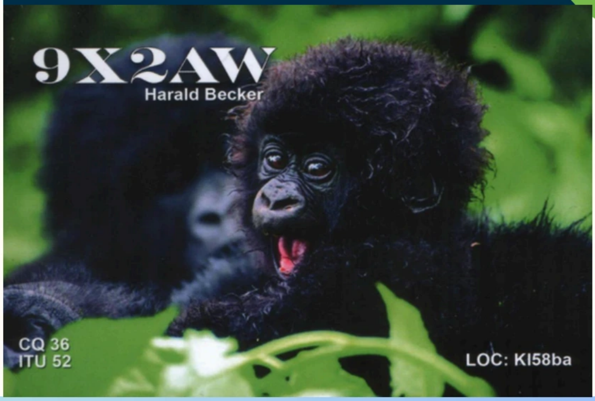
He will operate on 160 – 6 m, using CW, SSB, digital modes, and via the QO-100 satellite.

Latest DX Spots: 9X2AW

QSL via M0OXO, OQRS.

Direct QSL requests:

Charles Wilmott, 60 Church Hill,
Royston, Barnsley, South Yorkshire,
S71 4NG, England.



02.

P44W Aruba

John, W2GD, will be active as P44W from Santa Cruz, Aruba Island, IOTA SA-036, from February 16 to 23, 2026.

He will operate on HF bands, including participation in the ARRL DX CW Contest in the SOAB category.

Latest DX Spots: P44W

QSL via LoTW and N2MM.

Direct QSL requests:

Carol Richards, 22 Mill Rd, Shamong, NJ 08088, USA.

02

The colonization of the island, near the coast of Venezuela, began in the early 16th century with Spanish deportees and inhabitants of the Netherlands, who worked in copper mines and later turned it into a Spanish military base. The Dutch developed agriculture and livestock, taking advantage of the fertile soil and climate, raising horses and increasing the number of goats every year.

03.

V3O V31KO Belize

DL8UD will be active from Belize as V3O in the ARRL DX CW Contest, from February 21 to 22, 2026. He will operate in the SOAB HP category.

Latest DX Spots: V3O

Latest DX Spots: V31KO

He will be active as V31KO before and after the contest.

QSL via EA5GL

03

Belize, a small country on the Caribbean coast surrounded by tropical jungles, is a destination that attracts those seeking exoticism, wildlife, and the mysteries of ancient civilizations. It is not a mass-tourism location; it is primarily visited by travelers looking for unforgettable adventures and unique nature experiences.

Although the country's infrastructure is limited and lacks luxury hotels and sophisticated resorts, this is offset by stunning landscapes, abundant wildlife, and ancient Mayan pyramids hidden in the jungle. Additionally, near the coast lies the barrier reef, the second-largest in the world and the longest in the Western Hemisphere, making Belize an ideal destination for diving and snorkeling, offering a unique and memorable underwater experience.

ORLANDO HamCation®

SWR Magazine at HamCation 2026

📅 February 13–15
📍 Orlando HamCation 2026
🏢 North Building
🎯 Stand #185

This 2026, SWR Magazine crosses borders to meet face-to-face with the community that lives, feels, and breathes amateur radio.
We'll be present at one of the most important events in the world.
Visit us at the North Building – Stand #185 and be part of this experience where radio connects generations, stories, and passions.
Meet the team behind the magazine, share ideas, discover our projects, and celebrate with us the magic of radio.

SWR Magazine
Where radio isn't just a hobby... it's a way of life.

QRP Mastery: 10 Keys to Successful Portable Operation

By: Paul R. Signorell W0RW

Understanding Propagation and Band Activity

Portable QRP operation combines technique, planning, and adventure. Here are ten key principles to maximize your success in the field, from choosing the right location to ensuring your personal safety.

With QRP, every contact counts, so check conditions before heading out. Monitor DX Cluster, RBN, or reference stations such as “Trenton Military” (15034 kHz) and “CHU” (14670 kHz) to assess real-time propagation. The 20-meter band performs best during the day, while 40 and 80 meters are ideal at night. Avoid peak hours and contests to keep the band clear, and choose frequencies free of nets, traffic, or RTTY.

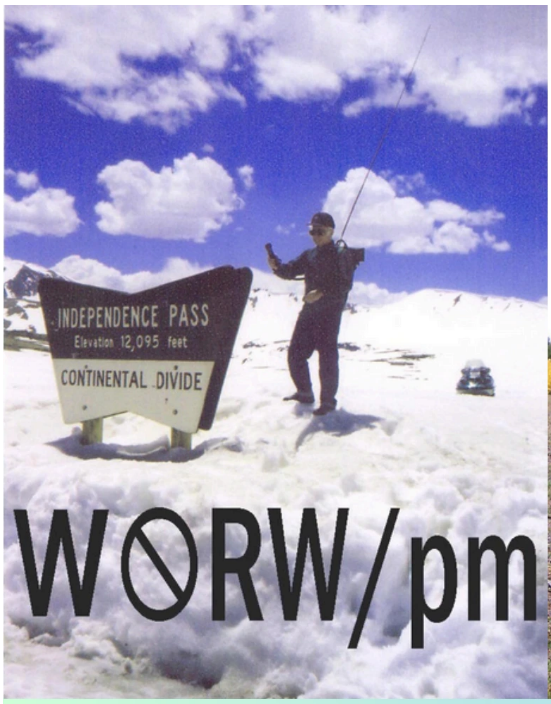
Don’t forget that ionospheric absorption and noise are key factors: never operate when the A Index is high. WWV and WWVH stations provide reliable beacon signals that help evaluate propagation.

Favorable weather for operating

Weather directly affects your comfort and safety. Choose warm, calm days with little or no wind, and check reliable forecasts for example, at weather.gov. Even local webcams can be useful; sites such as Pikes Peak, Colorado, offer HD panoramic views to assess real conditions before heading out.

Get everything ready at home

Before leaving, make sure your responsibilities at home are taken care of. Review your XYL’s to-do list to avoid surprises and ensure a smooth, worry-free return.



WORW/PM
Mueller State Park,
Colorado

With safety awareness and attention to your surroundings, portable QRP becomes a rewarding experience that brings together radio and nature.

Choosing the location and checking access

National and state parks are excellent places to operate (Find a Park), and POTA provides comprehensive park listings (POTA List). Verify that roads and trails are open snow, landslides, or unexpected closures can ruin your operation.

Look for open areas to set up your antenna and clear trails if operating Pedestrian Mobile, avoiding branches that could interfere with the antenna.

Equipment ready for action

Check your gear before heading out: a pre-tuned antenna, radio mounted in your backpack, fully charged battery, microphone, headphones, key, SWR meter, pen, and log. Always carry spare batteries and duct tape for any unexpected situation. This preparation prevents oversights and ensures every contact is possible.

Hydration and nutrition

Bring water, a light meal, and your VHF HT in a backpack or waist pack. Staying hydrated and energized makes your operation comfortable and sustainable.

Advance communication: announcing your operation

Posting your plans a day in advance on reflectors or groups helps other operators find you. Include frequency (local and GMT), operating times, location, links to photos or maps, and any QSL information. Useful platforms include QRPspots, HFnow, QRP-L, POTA, and SOTA Spots. Being on the exact frequency at the announced time ensures more contacts and avoids frustration.

W0RW/pm
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BAND
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Portable QRP operation depends on good planning, an accurate reading of propagation, and well-prepared equipment.

Vehicle preparation

Make sure you have enough fuel, check the tires and oil, and carry any necessary emergency equipment. A well-prepared vehicle reduces risks and unexpected setbacks.

On-site setup and initial adjustments

Once at your location, set up your gear, connect the antenna, and verify power output and frequency. For Pedestrian Mobile operation, adjust your whip or dragwire and put on your backpack, ready for the trail.

Safety first

Always be prepared for adverse conditions. Bring rain gear, sturdy boots, and appropriate protection for the terrain. Inform someone of your travel plans and carry a cellphone or an HT capable of reaching a repeater. Preparation and caution ensure a safe and satisfying experience.

Summary

Portable QRP operation is the result of good planning, awareness of your surroundings, and proper equipment preparation. Understanding propagation, choosing the right band, and avoiding periods of high activity significantly increase the chances of making contacts.

Having your equipment checked, your antenna properly tuned, and your batteries fully charged prevents setbacks in the field. Finally, personal safety and preparedness ensure that portable QRP is a rewarding experience that blends radio, nature, and an adventurous spirit.

YAESU FT-70DR

AFFORDABLE FUSION FOR BEGINNERS WITH AN EYE ON THE FUTURE

Photos by: Yaesu.com

By: SWR Editorial Team

The Modern Hand of Amateur Radio

When Yaesu released the FT-70DR, many in the amateur radio community noticed something special: for the first time, an affordable handheld that incorporated C4FM System Fusion technology. This placed it among the most budget-friendly radios with advanced digital capabilities—perfect for those taking their first steps into digital modes without sacrificing quality or functionality.

Design and Overall Functionality

The FT-70DR is a dual-band transceiver (144/430 MHz) that combines the classic analog FM mode with modern C4FM Digital (System Fusion). It does so automatically thanks to its AMS (Automatic Mode Select) feature, which detects whether the incoming signal is digital or analog and switches modes without any operator intervention.

Why this matters:

For many beginners, transitioning between modes can be confusing. AMS greatly simplifies daily use, especially when exploring both digital and analog repeaters in the same day.

Audio Quality and Power

- Output: Up to 5 W RF power.
- Audio: Front-facing speaker delivering 700 mW, making it relatively powerful for a compact HT.

Many users note that the clean and consistent audio especially in C4FM mode is superior to what one would expect at this price range.

Beginner-Friendly Features

The FT-70DR is a very popular choice as a first handheld radio because:

✓ It combines analog FM and digital C4FM effortlessly.

✓ It features a simple, easy-to-program button layout.

✓ AMS prevents mistakes when selecting modes manually.

✓ Competitive pricing among radios with Fusion capabilities.

This makes it one of the recommended radios for newly licensed operators or those upgrading from a Baofeng, offering a more professional experience without a large investment.

Useful Features

In addition to the basics, the FT-70DR offers:

- Programmable and memory scanning
- Multicolor LED indicating the operating mode
- Wide receive range, even outside amateur bands
- IP54 protection against dust and water
- External DC connector and mini-USB port for programming

YAESU
FT-70D
Limited Warranty Card
YAESU
YAESU
144/430MHz
DIGITAL/ANALOG TRANSCEIVER
FT-70DR/DE
C4FM FDMA

What You Should Know Before Buying

👉 Battery: Some operators report that battery life can be moderate (8–10 hours with typical use) and recommend carrying spare batteries or a fast charger.

👉 Water resistance: IP54 is helpful but does not make the radio fully submersible.

Even so, these points do not diminish the value of the FT-70DR as an entry-level tool for the digital and dual FM world, especially considering its affordable price.

SWR Verdict

The Yaesu FT-70DR stands out as:

- One of the most affordable options with C4FM capability.
- An excellent first digital and analog HT.
- Easy to use, with powerful audio and modern features.

If you’re guiding new amateur radio operators or want a versatile HT without straining your budget, this model deserves a prominent place.

Handheld (HT) Comparison for Amateur Radio Operators

Model	Bands	Digital Modes	Approx. Price	Highlighted Features
Yaesu FT-70DR	144/430 MHz (VHF/UHF)	C4FM (Fusion)	$$ (budget-friendly)	Economical with Fusion; automatic AMS; great audio quality-price ratio
Yaesu FT-3DR	144/430 MHz	C4FM (Fusion)	$$$ (mid-range)	Modern interface, Dual VFO, GPS and Bluetooth
Icom ID-52A	144/430 MHz	D-STAR	$$$$ (high-end)	Color display, D-STAR and advanced connectivity
Baofeng DM-1701	144/430 MHz	DMR Tier II	$ (very affordable)	Cheap DMR, programmable, and good battery
Yaesu FT-65R	144/430 MHz	Analog FM	$$ (basic)	Simple and rugged for traditional FM

YAESU
433.500
SUBMERSIBLE VX-6
YAESU
145.500
Digital
FT-70D

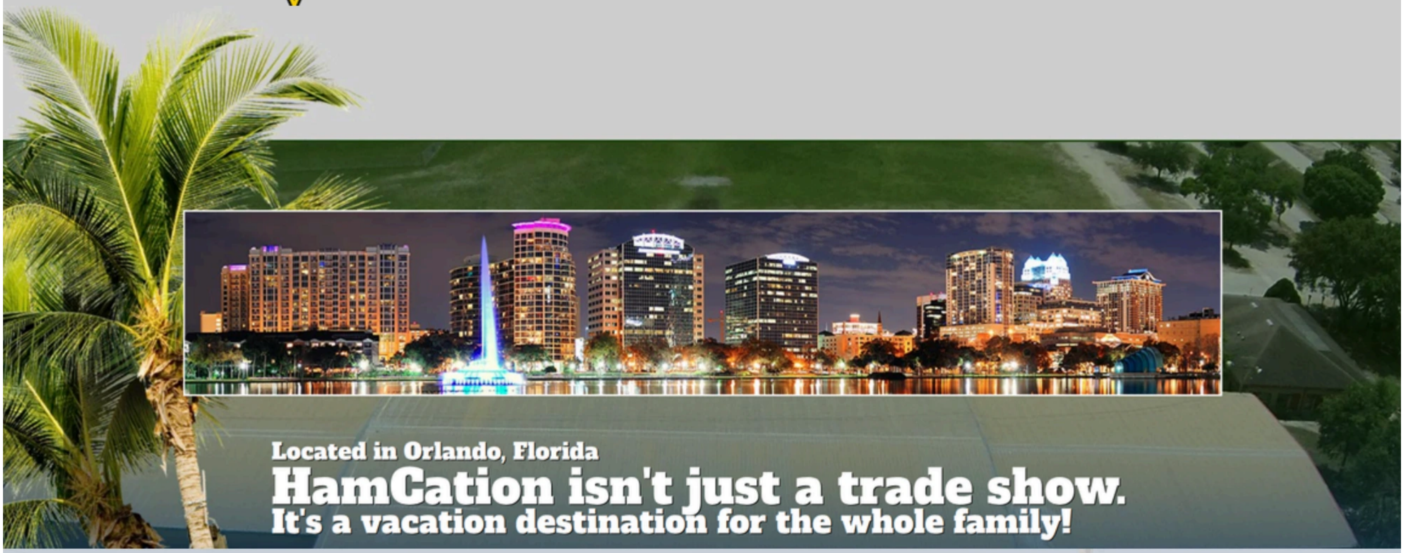
Welcome To

HamCation 2026

Central Florida Fairgrounds and Expo Park

February 13th - 15th, 2026

Host of the ARRL Southeastern Division Convention



Located in Orlando, Florida

HamCation isn't just a trade show.

It's a vacation destination for the whole family!

Banquet Information

Join us and enjoy an evening celebrating amateur radio with a local Farm-to-Table menu, great company, the presentation of HamCation's annual awards, and a keynote speech.

About HamCation 2026

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SWR Magazine at HamCation 2026, North Building – Booth #185. Come join us!

RESONANCE IN ANTENNAS: KEY TO EFFICIENT ENERGY TRANSFER

By: Serafin Martinez KP4FIE

Resonance occurs when the effects of an antenna's inductive (XL) and capacitive (XC) reactances cancel each other out at a given frequency. In other words, when XL − XC = 0, the antenna behaves like a pure resistance.

If the antenna's length is altered relative to the transmitter frequency, or the frequency itself is changed, complex impedances are generated, which can have adverse effects on the radio–coaxial line–antenna system. In an ideal world, the goal is for the antenna to present a 50-ohm impedance, matching the transmission line and the transceiver.

When the entire system maintains a 50-ohm impedance, the resulting Standing Wave Ratio (SWR) is 1:1. Under these

Photo by: tekshack.com

conditions, energy transfer is maximized.

There are also antenna systems based on LC circuits, which use inductors and capacitors as part of their design to allow operation over a broader frequency range.

The concept of resonance also applies to other circuits, such as:

Radios:

They use circuits made up of inductors (L) and capacitors (C) to increase efficiency in both reception and transmission. These circuits act as filters, allowing the system to resonate only at the desired frequencies. The formula to calculate the resonant frequency (in Hz) of an LC circuit is:

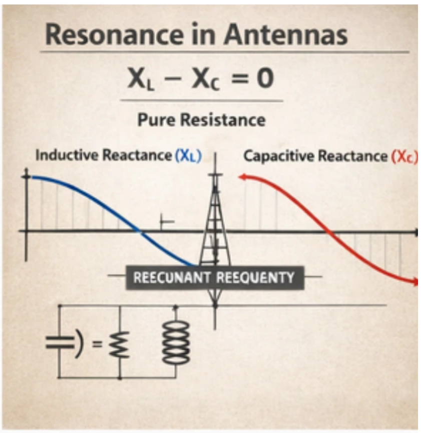
$F = 1 / (2\pi\sqrt{LC})$ where L represents the inductance in henries and C the capacitance in farads.

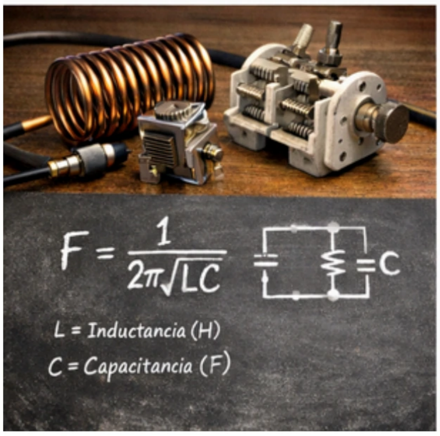
Photo by: OnAllBand

Antenna Tuners:

These devices, known as antenna tuners in English, use LC circuits, usually with variable inductors and capacitors, to match the impedance presented by the antenna and “trick” the radio equipment. This allows the radio to see an impedance close to 50 ohms, which is required for efficient and safe operation.

In conclusion, resonance is the fundamental basis for the design and operation of efficient radio systems, as it ensures proper energy transfer between the transmitter, the transmission line, and the antenna. By achieving correct impedance matching, losses are minimized, system performance is maximized, and effective, reliable communication between stations in different parts of the world becomes possible.


Resonance in Antennas
$X_L - X_C = 0$
Pure Resistance
Inductive Reactance (X_L)
Capacitive Reactance (X_C)
REECUNANT REEQUENTY


$F = \frac{1}{2\pi\sqrt{LC}}$
C
L = Inductancia (H)
C = Capacitancia (F)

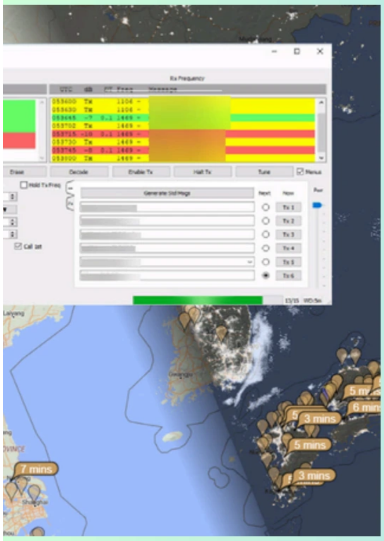
550 Ω
ANTENNA
INDUCTOR
TRANSMITTER
7,100.0

When the QSO stops talking

By: SWR Editorial Team

REFLECTIONS ON FT8 AND HAM RADIO

Photo by: K0NR



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DELL

Redefining the Spirit of the Hobby in the Digital Era

For decades, many of us grew up listening to voices on the phone bands, the melodic rhythm of CW, and the murmur of DX on HF. Those afternoons when a band would open, and with patience, we adjusted antennas, corrected noise, and planted persistence in every CQ call. The very spirit of ham radio was tied to the art of human contact: listening, responding, and conversing.

Today, however, a digital mode called FT8 has sparked one of the most profound, extensive, and sometimes passionate discussions within the community. Is FT8 ham radio? Or have we lost something essential along the way?

From Tradition to a New Reality

FT8 (Franke-Taylor 8-FSK) is a digital mode designed for weak-signal communications, capable of decoding extremely faint signals even when propagation conditions are poor and at low power levels. It was released in 2017 by Joe Taylor, K1JT, and Steve Franke, K9AN, as part of the WSJT software suite. Since then, it has become one of the most widely used modes by ham radio operators on HF worldwide.

What makes it powerful its efficiency, its ability to complete contacts under challenging conditions, and the automation of exchanges is also what draws criticism and evokes nostalgia for traditional modes.

What Do Its Critics Say?

Some operators, especially those who love phone and CW, feel that FT8 does not reflect what they have always understood as “authentic ham radio.” The exchanges are minimal and almost automatic; there is no conversation, no deep contact, and none of the traditional challenge of adjusting antennas and listening techniques.

On forums and blogs, it is often said that FT8 limits the traditional role of the operator, as much of the process is handled by the software, and contacts are reduced to a rigid exchange of data without human nuance. Some even comment that with FT8, DXCC and other achievements can be reached so quickly that it might “devalue” them. A Reddit user summed up this sentiment by saying that voice QSOs—even when they often only exchange reports and “73”, at least have the potential for human interaction, something FT8 does not allow.

FT8
DX ZONE
14.076 000
2014 Sep 09
14:09:52

And What Do Its Supporters Argue?

On the other side of the spectrum, many operators see FT8 as a tool that revitalizes HF, especially during periods of low solar activity or poor band conditions. FT8 allows small stations, with modest antennas or restrictive urban locations, to achieve international contacts that would be nearly impossible with more traditional modes.

For these operators, FT8 is not only valid but valuable, as it brings more people into the hobby. On some community blogs, it is noted that even with FT8, many users combine the digital mode with CW and SSB, enjoying the diversity of the spectrum rather than seeing it as an exclusive replacement.

Some even point out that ham radio has always been a blend of technical skill, curiosity, and voluntary communication between operators. Under this definition, the specific mode is secondary: what matters is that two people decide to connect over the radio, regardless of whether they do so using voice, code, or digital bits.

Has the Spirit of Ham Radio Been Lost?

The answer depends on how we understand that “spirit.” If we associate it solely with traditional modes or long conversations, some feel that FT8 deviates from it. But if we see it as the constant pursuit of communication across the spectrum, experimentation, and the overcoming of technical limits, FT8 is simply a natural evolution.

Ham radio has changed many times throughout its history: from the first vacuum-tube transmitters, through the rise of SSB, the appearance of RTTY, and up to modern digital modes. Each new advancement sparks debate, resistance, and ultimately broader integration.

Perhaps the key lies in not losing the value of what came before while embracing what technology offers us today. It is not a matter of good or bad modes, but of understanding that ham radio is bigger than any single mode.

Final Reflection

The magic of our hobby is not in how we send a signal, but in the fact that we keep trying to communicate, learn, and connect, regardless of noise, band, or mode. Perhaps the true spirit is not lost it simply transforms, as it always has throughout the history of ham radio.

Each generation has faced its own changes: from the first vacuum-tube transmitters, to the arrival of phone, CW, digital modes, and now FT8. In each case, some miss the “traditional” way of operating, while others discover new ways to enjoy the hobby. That tension is part of what keeps ham radio alive: a constant conversation between tradition and progress.

What remains unchanging is the passion that drives us to power up the radio, adjust the antenna, wait for propagation, and log a new contact. It doesn’t matter whether it’s done with voice, code, or digital bits: the act of seeking, listening, and connecting is what continues to give meaning to ham radio. On the air, every QSO is a bridge, every signal tells a story, and every operator remains part of a community that has endured for decades thanks to curiosity, dedication, and the human desire to communicate.

In the end, perhaps FT8 does not take us away from the spirit of ham radio, but instead reminds us that this spirit is far broader: it is creativity, passion, patience, and the ability to adapt always with our eyes set on listening and connecting with others, beyond any mode or technology.

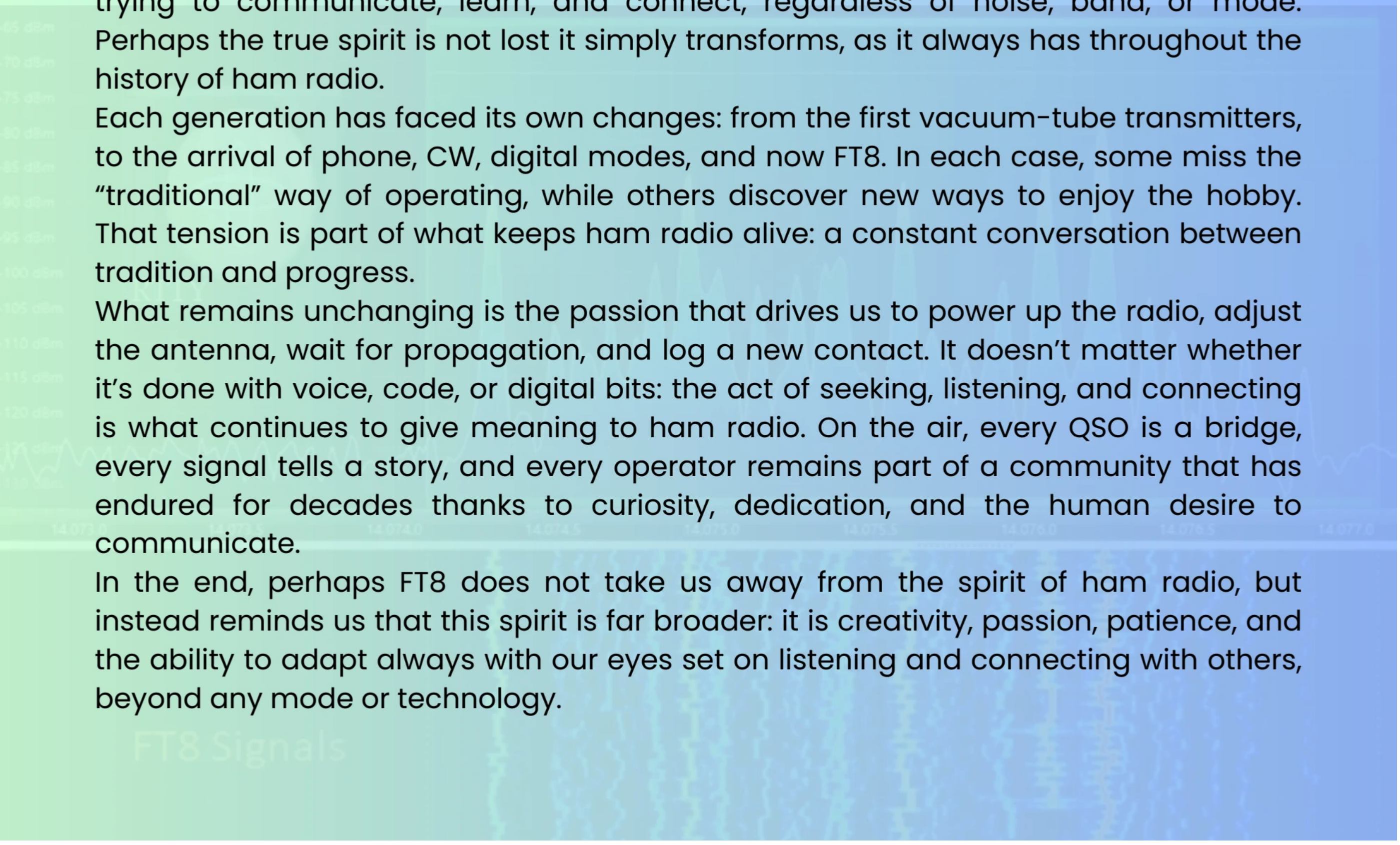

Photo by: qrper.com

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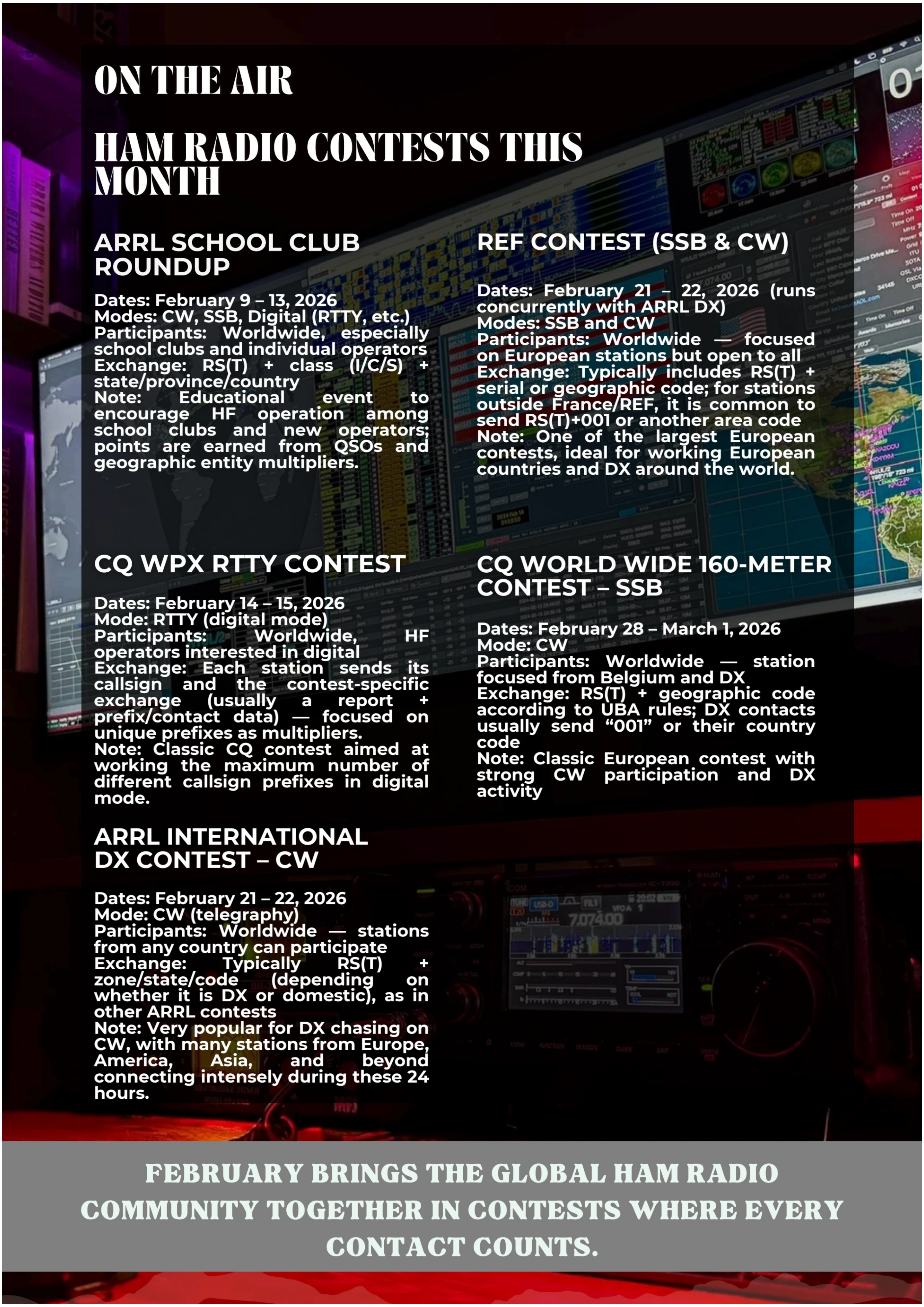


ON THE AIR

HAM RADIO CONTESTS THIS MONTH

ARRL SCHOOL CLUB ROUNDUP

Dates: February 9 – 13, 2026
Modes: CW, SSB, Digital (RTTY, etc.)
Participants: Worldwide, especially school clubs and individual operators
Exchange: RS(T) + class (I/C/S) + state/province/country
Note: Educational event to encourage HF operation among school clubs and new operators; points are earned from QSOs and geographic entity multipliers.

CQ WPX RTTY CONTEST

Dates: February 14 – 15, 2026
Mode: RTTY (digital mode)
Participants: Worldwide, HF operators interested in digital
Exchange: Each station sends its callsign and the contest-specific exchange (usually a report + prefix/contact data) — focused on unique prefixes as multipliers.
Note: Classic CQ contest aimed at working the maximum number of different callsign prefixes in digital mode.

ARRL INTERNATIONAL DX CONTEST – CW

Dates: February 21 – 22, 2026
Mode: CW (telegraphy)
Participants: Worldwide — stations from any country can participate
Exchange: Typically RS(T) + zone/state/code (depending on whether it is DX or domestic), as in other ARRL contests
Note: Very popular for DX chasing on CW, with many stations from Europe, America, Asia, and beyond connecting intensely during these 24 hours.

REF CONTEST (SSB & CW)

Dates: February 21 – 22, 2026 (runs concurrently with ARRL DX)
Modes: SSB and CW
Participants: Worldwide — focused on European stations but open to all
Exchange: Typically includes RS(T) + serial or geographic code; for stations outside France/REF, it is common to send RS(T)+001 or another area code
Note: One of the largest European contests, ideal for working European countries and DX around the world.

CQ WORLD WIDE 160-METER CONTEST – SSB

Dates: February 28 – March 1, 2026
Mode: CW
Participants: Worldwide — station focused from Belgium and DX
Exchange: RS(T) + geographic code according to UBA rules; DX contacts usually send “001” or their country code
Note: Classic European contest with strong CW participation and DX activity

FEBRUARY BRINGS THE GLOBAL HAM RADIO COMMUNITY TOGETHER IN CONTESTS WHERE EVERY CONTACT COUNTS.

CHARLIE AND THE FIELD DAY CHICKEN

By: Alan J. Wilson N0XO

N7CRT
ARRL
Field Day
2021

I first met Charles Thornton, better known as Charlie, at the 2021 ARRL Field Day in Salmon, Idaho. But calling it “Field Day” was generous; it was more like a sad little joke: a single lonely antenna wrapped around the trunk of a tree like a half-hearted hug, and barely a handful of people present just enough to make a quorum, let alone spark a radio revolution. I had just moved from a very hardcore group in Montana, where we treated Field Day like a military campaign: 24 hours of non-stop action, with two operators hammering away at CW like caffeinated woodpeckers on steroids. Eager to test the new environment without diving in headfirst, I decided to let the so-called local group handle the planning and setup, while I played backup: showing up to support and, perhaps, sneak in a few contacts along the way.

But, oh boy, I had no idea what surprise awaited me one that hit harder than a sudden band blackout. A guy showed up walking with confidence, with an accent as thick as January molasses. He had been a ham years before, but had let his license lapse, probably during some epic stage of “life got in the way.” The sparse crowd seemed more interested in gossiping about local matters and swapping stories about recent area drama than making contacts. It looked like a high school reunion where the radios were just awkward props, gathering dust while everyone remembered who stole whose frequency back in ’98. Meanwhile, I was operating solo, like a one-man band at a funeral: logging contacts, talking to stations, all without even a headset to buffer the chaos.

Then Charlie stepped up to the microphone. He was rusty, like an old nail left out in the rain, but unlike so many Field Day rookies who treat the mic as if it were a grenade about to blow up in their face, he grabbed it with gusto, as if he were going to serenade the ionosphere. I handled logging on the computer, since I knew the program forwards, backwards, and in binary, and we started knocking out contacts at a solid pace, like a well-oiled comedy duo straight out of some forgotten vaudeville act.

Unfortunately, the battery that was “guaranteed” to last all night and recharge with solar power (spoiler alert: it was a blatant liar, probably designed by the same people who promise “unlimited data” on cell phone plans) died by mid-afternoon, turning our grand operation into a pumpkin faster than Cinderella’s carriage. Field Day over, just like that—poof! Charlie, unfazed and with the energy of a man half his age, dashed over to another ham’s station and racked up about a hundred more contacts, probably while sipping sweet tea and recounting stories of his glory days. I, grumbling like an old man scolding the clouds (or in my case, unreliable technology), went home and worked a bunch of stations from my own setup, muttering about batteries that betray you worse than a flaky repeater.

Charlie didn’t even have a legal callsign yet, thanks to a monumental blunder by the local VEC: they forgot to file or sign something crucial, turning the whole process into a bureaucratic comedy of errors. He fought with the sponsoring group tooth and nail; he even called the FCC, which confirmed that he had passed his exams, but someone had dropped the ball worse than a microphone on a bad karaoke night (feedback and all). This mess dragged on for almost a year, testing his patience like a weak signal under heavy QRM, until he finally got his callsign: N7CRT.

Charlie had a tower lying on the ground, gathering dust and probably serving as a perch for the local birds, and with his stage 4 colon cancer sucking his strength like a vampire at a blood bank, there wasn’t much he could do about it. Like me, he attended the group’s meetings—if you could even call them that—and tried to push them to become a real club again, with actual activities beyond coffee and complaints. But the person running the show was basically a dictator in shorts, ruling the ham club with an iron fist wrapped in coaxial cable, and the new hams knew nothing else; they thought it was normal, like putting pineapple on pizza or using AM on a crowded band.

Photo by: Renae Horvath

Photo by: reddit.com

During a bout of COVID that left me grumpier than a bear with a thorn in its paw (and with a side of sinus infection), I finally lost patience with the constant interruptions on the 2-meter net—overlapping conversations like bad pileups—and I blurted out, “I’m out, take me off the list!” in a dramatic soap-opera exit. Charlie did the same a few weeks later, resigning in his characteristic Southern style, probably tipping an imaginary hat while signing off with a theatrical “73 and out.”

Charlie was always talking nonstop about doing a POTA (Parks On The Air) activation, especially since his tower kept “playing dead” like a lazy actor in a bad play. So, early in the spring, when the snow at Lost Trail Pass was deeper than a politician’s excuses and thicker than my winter beard, we packed up and headed out. There’s a ski resort there that kindly lets us place one of our repeaters, so we claimed a semi-heated back room like radio bandits mid-heist. I trudged through the snowdrifts like a low-budget polar explorer, nearly losing a boot in the process (cursing the gods of snow) to hang one end of the antenna. With an Icom 7300 buzzing like a satisfied beehive, Charlie made the first contact and then passed the mic to Ray or me as if we were tag-team wrestlers. We called back, giving the other station our three callsigns and explaining our strange setup: antenna in Idaho, radio in Montana, right in the middle of the Salmon and Bitterroot National Forests. It was like operating from a borderland limbo, where even the squirrels didn’t know which jurisdiction they were in.

Between Charlie’s accent—a mix of Texas and Tennessee—my Alabama hillbilly drawl, and Ray’s straight and clear tone, we attracted stations like flies to honey. We didn’t want to hog all the fun, so we let Charlie go wild; he was having a blast, grinning like a kid in a candy store who just discovered the free samples. We ended up with 36 contacts, and I swear the accents alone added 10 dB to the signal.

That same year, Charlie and Ray organized what was probably the first and only Whitewater Hamfest in Salmon, Idaho, a town so remote in Lemhi County that you have to drive three hours north or south to reach the nearest Walmart. We rented the Whitewater Arena and turned it into a ham radio paradise: vendors, exams where 13 brave souls passed, and a flea market where I got rid of a mountain of radio junk in record time. Hams arrived from several states and even from Canada. We had a blast and almost broke even which in ham radio counts as a success.

By the end of April, Ray, Charlie, and I decided to rebel once again for Field Day. We set up at an RV park in Leadore, Idaho. By then, Charlie’s kidneys had said, “enough,” so he was spending five nights a week in an Idaho Falls trailer for dialysis.

.

Photo by: Renae Horvath

HEATHKIT
FUNCTION

Photo by: reddit.com

Even so, he maintained a surprisingly cheerful spirit, cracking jokes despite all his ailments. We hung a G5RV between two trees, and on Saturday we got started. Contacts were slow at first, until Charlie's wife showed up with… a live chicken in a cage? That chicken produced more QRM than a faulty amplifier. Eventually, they left, and Charlie took the microphone and took off on SSB, working contacts with an enthusiasm that cut through any poor propagation.

That was Charlie's first and last big Field Day, and I am profoundly glad he went out with such joy. Later that summer, he got a home dialysis machine, we all helped raise his tower, and he was able to operate HF from his chair again. Shortly after, he suffered a massive stroke, and after battling cancer and kidney failure, he left us. His tower still stands in the yard, a silent monument to a great ham radio friend.

We miss you, Charlie. God bless you. I hope up there you're working exotic DX, with S9 signals and no QRM. 73 from N7CRT. SK SK.

Photo by: Donnie Zierhart

There are towers that seem abandoned, rusted by time and silence, but that are actually full of voices. Voices that once crossed mountains, forests, and borders; voices that laughed during a Field Day, that persisted even when propagation was poor, that kept calling CQ even when the body could no longer respond the same way.

Turner +2

The Nostalgia Nook

The Turner +2, back when voices had character.

There was a time when entering a ham radio shack was almost a ritual. The smell of warming equipment, the gentle hum of the power supply, and on the desk, as the centerpiece, a microphone that commanded respect. For many of us, that microphone was the Turner +2. It wasn't just another accessory. It was the microphone. Just seeing it its chrome base, its sturdy capsule, its firm switch made you know that experience, hours of listening, and hundreds of QSOs were a cumulated on that dial. Powering up the rig and taking the Turner +2 in your hand was a feeling hard to describe today. It weighed just right, conveyed solidity, and when you pressed the PTT, you felt your voice wouldn't go on the air alone: it carried character with it.

In those years, when digital processors and software equalizers didn't exist, the operator's voice was their true signature. And the Turner +2 helped shape it. Its built-in preamplifier enhanced presence, added body to the modulation, and allowed the voice to cut through noise, static, and challenging conditions. Many could recognize a "Turner audio" as soon as they heard the first call. There was no need to ask which microphone the fellow on the other end of the QSO was using… it was obvious.

On SSB, the Turner +2 shone. On AM, it commanded. And in both cases, it made the operator feel secure, confident, and heard. During the 1960s, 70s, and early 80s, the Turner +2 became a symbol within ham radio. Having one in the shack signaled a commitment to the hobby. It wasn't the cheapest microphone, but it was one of the most coveted. Many acquired one after years of using the rig's original microphone. It was a sort of "graduation": the moment when a ham felt their station had reached a new level. And oh, how many stories were woven around it. Endless late-night QSOs, friend nets on 40 meters, DX calls with the hope that this time they would respond… all of it passed, again and again, through that capsule.

Today we live surrounded by SDRs, touchscreens, and advanced digital processing. And while all of that is wonderful, there's something the Turner +2 reminds us: the essence of ham radio is still the human voice crossing space. The Turner +2 wasn't just a microphone. It was a companion, a witness, and a symbol. It amplified voices, yes, but it also amplified dreams, friendships, and endless nights in front of the dial.

And as long as there is a ham who remembers with a smile that warm, present sound, the Turner +2 will live on… on the air and in memory.

TURNER
MICROPHONES
SPECIFICATIONS for +2
Transistorized Microphone
TURNER

By: SWR Editorial Team

The Nostalgia Nook

RF Explorer ®Pro
RF Explorer Live Data
Default
Mode
Config
Amplitude
Frequency
Generator
Marker
File
Presets
Full Screen
HELP
Exit
Play
Hold

Photo by: iot-store.com

EXPLORING 10 GHZ

MICROWAVES FOR THE HAM RADIO OPERATOR

By: Dimtcho Gueorguiev VE7NX
Erika Natarajan VA7ISI / HJ1ISI

Microwave bands within the Amateur Radio Service have historically been associated with experimentation; however, they have traditionally been difficult to access due to the high cost of the necessary equipment and the limited availability of specialized components. Unlike HF or VHF, where operation is more widespread and equipment is easy to obtain, the 10 GHz band requires greater precision in alignment and a high degree of creativity in equipment construction. For this reason, its use has been primarily experimental.

From an electromagnetic perspective, microwaves span roughly from 1 GHz up to several hundred gigahertz. This region of the spectrum is characterized by very short wavelengths: while at 28 MHz the wavelength is about 10 meters, at 432 MHz it is approximately 70 cm, and at 10 GHz it reduces to about 3 cm. Typical commercial VHF/UHF equipment usually covers up to 432 MHz and, in some cases, up to 1296 MHz; beyond that point, direct operation is no longer possible.

To access bands like 10 GHz, a transverter is used, which functions as a "frequency translator." On reception, it converts the 10 GHz signal to a lower intermediate frequency (typically 144 MHz or 432 MHz), which any transceiver can tune, and on transmission, it performs the reverse process: taking the transceiver's low-frequency signal and upconverting it to 10 GHz. In this way, the operator can work on microwaves using a conventional radio that, on its own, does not understand this "language."

Thanks to this system, hams can utilize existing transceivers, even older models like the FT-290, to operate on microwaves without the need for specialized equipment. Building a 10 GHz transverter requires several fundamental blocks that allow a conventional transceiver to operate on microwaves. The central element is the frequency mixer, responsible for shifting the signal from the band the radio understands (for example, 144 MHz or 432 MHz) to the 10 GHz band and vice versa. This mixer also receives the signal from the local oscillator (LO), which acts as a reference for the frequency conversion.

The signal then passes through several RF amplification stages using small integrated amplifiers called MMICs (Monolithic Microwave Integrated Circuits), which compensate for losses and provide usable signal levels. To define the band around 10 GHz, resonant filters constructed from copper pipe caps are used; these act as adjustable cavities and attenuate out-of-band signals.

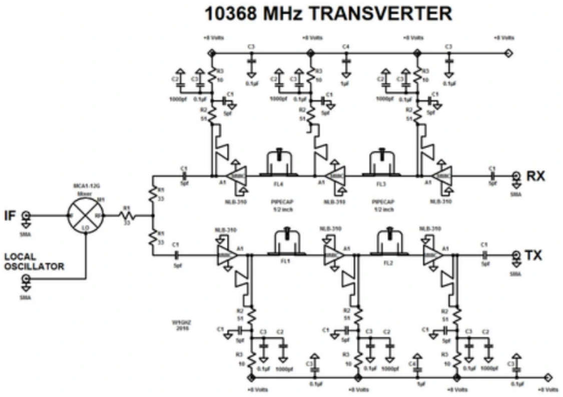


Figure 1. Design of a 10368 MHz Transverter
Author: Paul Wade, W1GHZ

In the diagram of the 10,368 MHz (10.368 GHz) transverter, shown in the figure, it can be seen how the signal from the mixer is split into two paths: a reception (RX) path at the top and a transmission (TX) path at the bottom. Both paths incorporate three MMIC stages and two resonant filters, as well as power and decoupling networks made up of surface-mount resistors and capacitors. Finally, SMA (SubMiniature version A) connectors allow the RF signals to enter and exit, while a thin printed circuit board, made of FR-4 material, supports the entire assembly.Thanks to this architecture, a radio not originally designed to operate on 10 GHz can transmit and receive on microwaves through proper frequency conversion.

The transverter delivers adequate performance for line-of-sight (LoS) links: output power between 5 mW and 10 mW, a bandwidth of approximately 70 MHz, and noise figures on the order of 8 to 9 dB (Noise Figure, a parameter that indicates how much noise the device itself adds to the signal being processed; lower values allow weaker signals to be detected). Although the design does not include very low-noise preamplification or high-power stages, its simplicity and low cost make it a viable and attractive option for experimenters interested in getting started on the 10 GHz band.

Additionally, this band is not only used for line-of-sight contacts but can also take advantage of atmospheric phenomena such as marine tropo, where the air over the sea forms a sort of "channel" that guides the signal, and rain scatter, where the signal is scattered by interaction with a storm. These mechanisms allow contacts over much greater distances than expected using very low power levels.

When operating on microwaves (frequencies in the gigahertz range), the printed circuit board (PCB) ceases to behave as a passive support and begins to function as a set of transmission lines, where substrate thickness, dielectric constant, and trace width directly affect the characteristic impedance. Under these conditions, a PCB that is too thick increases the electromagnetic field confined in the dielectric and promotes unwanted radiation into the air, causing the traces to behave partially like accidental antennas. This phenomenon degrades isolation, introduces additional losses, and reduces overall RF performance.

As for antennas, they become considerably smaller at 10 GHz because their size is directly related to the wavelength being received; since this wavelength is only a few centimeters, a resonant antenna only needs to measure a few millimeters.

Building on the conceptual design by W1GHZ, a Canadian ham, Dimtcho Gueorguiev VE7NX developed a modern implementation incorporating current electronic components, stability improvements, and mechanical considerations aimed at field use. While the original design left the local oscillator generation open to multiple possibilities, the modern implementation uses a PLL synthesizer based on the ADF4351 chip, controlled by a microcontroller via a sketch developed by F1AFN. This stage generates a signal in the 3.4 GHz band, which is then multiplied to reach the 10.224 GHz frequency required to operate with a 144 MHz intermediate frequency (IF).

Using a 10 MHz external reference improves frequency stability, reducing variations due to temperature—an essential factor for long-distance links and narrowband modes. Additionally, a final 150 mW amplifier stage, a sequencer for switching between transmit and receive, and power management modules supplying 5 V, 8 V, and 12 V to each subsystem were incorporated. The RF output is coupled via a WR-90 to SMA transition, allowing the use of standard microwave feedlines (Figure 2).

For the antenna system, a horn antenna with approximately 17 dBi of gain was chosen, mounted on a photographic tripod with a pan-tilt head to facilitate precise aiming. This seemingly minor detail is critical: at 10 GHz, angular directivity is so high that small displacements can completely nullify the signal, making the mechanical solution as important as the electronics (Figure 3).

Once the assembly was complete, field tests were conducted to evaluate overall performance. The first contact was made at a distance of approximately 12 km, demonstrating proper operation of the transverter and the oscillator-mixer-antenna chain. Subsequently, a contact was coordinated with several hams in Seattle, Washington, USA, achieving a direct-path link of approximately 162 km a remarkable distance considering the limited power of the system and the absence of tropospheric ducts or other known propagation phenomena.

This result confirms that low-level 10 GHz transverters, when combined with efficient directional antennas and good coordination practices between operators, can achieve cross-border links at distances exceeding what would normally be expected for the available power.

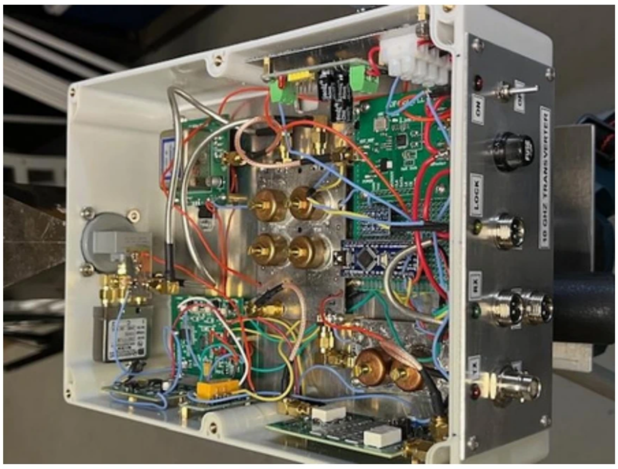


Figure 2. Internal system of a fully integrated 10 GHz transverter in its chassis.

In the central area, the copper resonant cavities forming the RF filters can be seen; these are used for band selection and spectrum control around 10 GHz. Surrounding these cavities are the various electronic boards housing the local oscillator, amplification stages, and control and stabilization modules. On the front panel are the RF connectors for transmit and receive, along with user interfaces for operating the equipment. Design by Dimtcho Gueorguiev VE7NX.

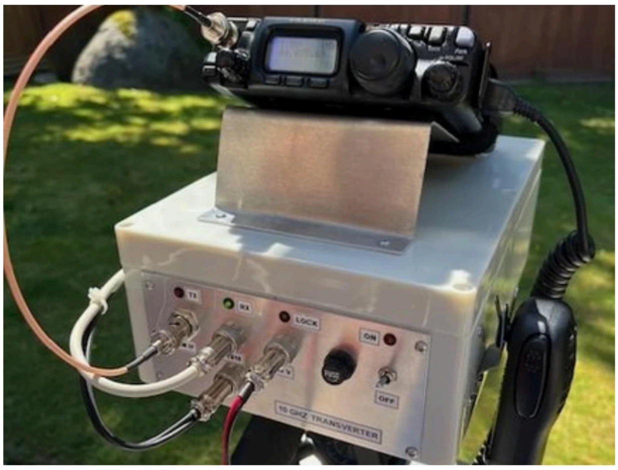
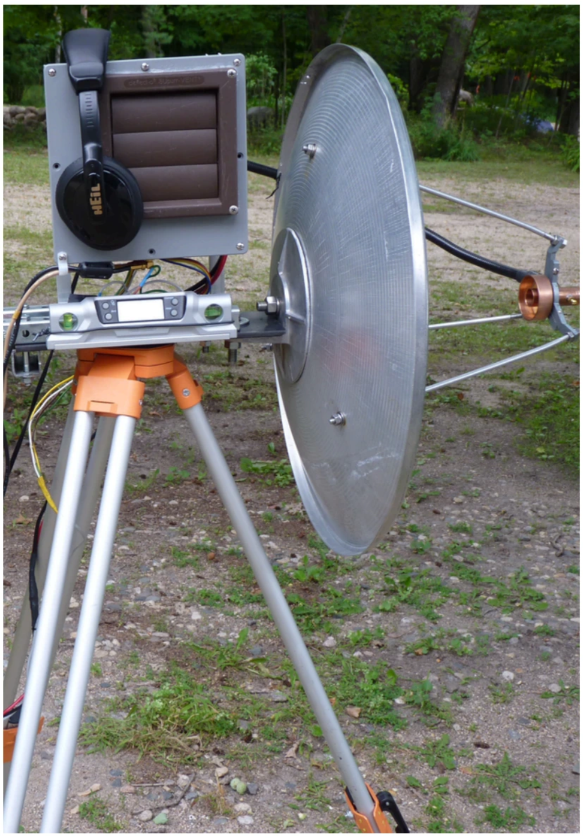


Figure 3. 10 GHz transverter in field operation, connected as an intermediate frequency to a portable Yaesu FT-817/FT-818 transceiver. Design by Dimtcho Gueorguiev VE7NX.

The current availability of commercial microwave modulessuch as MMIC amplifiers, PLL synthesizers, mixers, frequency references, and compact antennas has significantly reduced the cost of accessing the 10 GHz band. While in previous decades it was necessary to repurpose surplus military or industrial equipment, today it is possible to build a functional transverter using commercial modules and basic electronics, without relying on specialized manufacturing processes.

For those who only wish to experiment with reception, even more economical alternatives exist based on satellite TV LNBs and SDR receivers, which allow monitoring beacons, studying propagation, and observing band activity. Documented experiences are beginning to emerge in the Spanish-speaking region; a notable example comes from Chile, where in 2018 the first 10 GHz links were made using HB100 modules—originally intended for distance measurement—progressively achieving links from just a few meters up to 13 km in QRP operation (Eduardo Merino, CE3ETE).

Overall, the 10 GHz band constitutes a highly valuable educational and experimental platform for hams interested in modern RF, propagation, and equipment construction, emphasizing technical learning and hands-on experimentation over the conversational operation typical of other bands. A recurring drawback is that much of the technical material, designs, and existing documentation are available exclusively in English, which limits access to this information for part of the ham community. This article aims to bring that knowledge closer to the Spanish-speaking audience and contribute to expanding participation and development on these bands.



TEXAS
BG8 N485
BOERNE

Foto de: ARRL.com

By: Al Duncan – VE3RRD

DMR-TO-ANALOG FM REPEATER INTERFACE

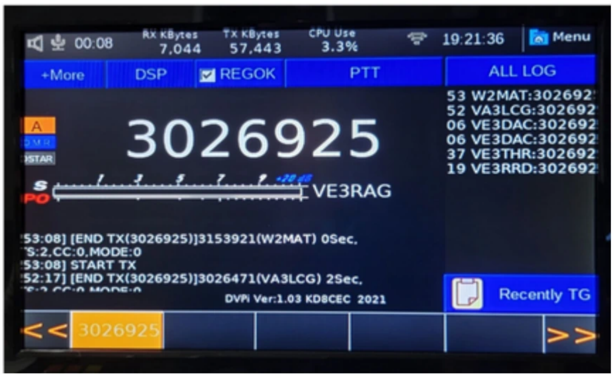
CC:1
TxContact:3803
T441.07500 R441.07500
BAND
ESC
P1
P2
P3
P4

In the world of ham radio, combining digital technologies with analog repeaters opens up new possibilities for local communication. For this reason, the VE3RAG club created an interface for its 2-meter FM repeater, allowing DMR network users to transmit through our local analog repeater on 147.000 MHz, while repeater users can communicate directly with those on the Brandmeister network. Since many hams access DMR via "hotspots," this interface provides a practical and reliable alternative for local communication.

A Radio ID was assigned to the club repeater's call sign, which was then registered on the Brandmeister network. This interface functions as a link to the repeater, not as a full repeater within the DMR network.

The project is made possible thanks to the DVPi software for Raspberry Pi, developed by KD8CEC, available at

.

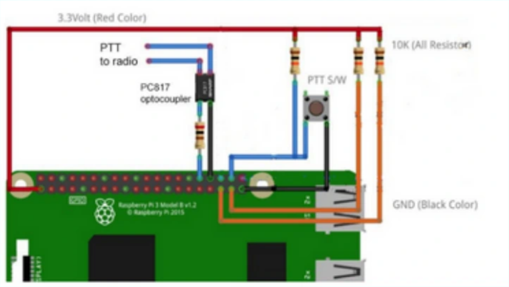

00:08
RX KBytes
7,044
TX KBytes
57,443
CPU Use
3.3%
19:21:36
Menu
+More
DSP
☑ REGOK
PTT
ALL LOG
A
DMR
DSTAR
3026925
S
PO
VE3RAG
Recently TG
<<
3026925
>>

```
53 W2MAT:302692
52 VA3LCG:302692
06 VE3DAC:302692
06 VE3DAC:302692
37 VE3THR:302692
19 VE3RRD:302692
```

```
53:08] [END TX(3026925)]3153921(W2MAT) 0Sec,
S:2,CC:0,MODE:0
53:08] START TX
52:17] [END TX(3026925)]3026471(VA3LCG) 2Sec,
DVPi Ver:1.03 KD8CEC 2021
```

The image above shows the DVPi screen when an HDMI monitor is connected to the Pi. To configure the software, the Windows program DVPi Manager is used, allowing all parameters to be adjusted easily.

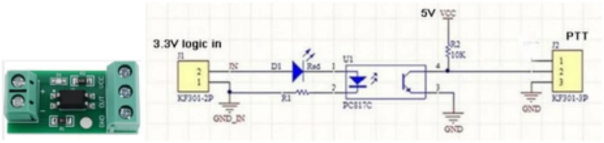
On the right side of the screen, the list of stations that transmitted on the DMR repeater TG 3026925 is displayed. In our experience, DVPi works best on Raspberry Pi 2 or 3 models, while it does not run on models 1, 4, or 5. The most recent version, v1.03, dates back to 2021; although the author has not released later updates, the software works perfectly on our Raspberry Pi 3B.


3.3Volt (Red Color)
PTT
to radio
PC817
optocoupler
PTT S/W
10K (All Resistor)
GND (Black Color)
Raspberry Pi 3 Model B v1.2
© Raspberry Pi 2015

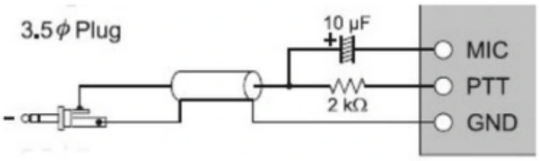
The local PTT switch is not required for the repeater interface. The transceiver is activated via an optocoupler connected to GPIO 12 (pin 32) of the Raspberry Pi. In the image, the blue wire is ground, the yellow wire is PTT, and the orange wire is +5V for use with other circuits such as the optocoupler. Note that the Raspberry Pi GPIO uses 3.3V logic, not 5V.

A USB sound card (Plugable USB Audio Adapter) is used, connected to the Pi, for the transmit and receive audio interface of the 2-meter FM transceiver, set to the repeater frequency. In our setup, we use a 5 W portable transceiver (Yaesu FT-270) with TX and RX tones set to the repeater tone of 156.7 Hz.

The DVPi software includes a VOX function for the audio received from the transceiver, so it is important to have the RX tone enabled to prevent noise or other interference from triggering the software VOX. Any audio occurring on the club repeater and received by the FM transceiver will activate the software VOX and be transmitted over the repeater's DMR TG.



I found an inexpensive optocoupler on Amazon.ca, rated for 3 to 5 V, which works well for the PTT circuit. The input of the optocoupler is connected directly to GPIO pins 32 and 34. Portables like the FT-270 require the PTT to be connected to the microphone audio input. A 2 kΩ resistor and a 10 μF electrolytic capacitor are used for this.



Additionally, the FT-270 (and some other Yaesu/Vertex portables) use a unique waterproof 3.5 mm TRRS connector for external microphone/headphones (a standard TRRS does not work). Fortunately, RadioWorld offers an adapter cable to connect the Heil Traveler headset (part number HTH-ADY), which terminates in a standard TRS connector. This allowed me to connect the combined microphone/PTT and access the received audio, which is sent to the USB sound card input. The microphone audio comes from the USB sound card output. Note that DVPi's audio input and output are mono, so you only need to wire one channel (left or right).

In the original build, I noticed digital noise issues and possible RF entering the audio. I added clip-on RF filters to all cables and isolated the USB sound card and PTT/microphone circuit in a separate metal enclosure. I also now use an antenna placed at some distance from the DVPi. These steps appear to have completely resolved the noise problem.

I also found that connecting the Raspberry Pi directly to the router via Ethernet cable is much more stable than using Wi-Fi.

Properly adjusting the audio input and output levels may require some experimentation. You want the output from the radio receiver to the sound card to be neither too high nor too low. DVPi levels are adjusted using the Manager. DMR users should sound approximately at the same volume as those using the repeater, and repeater users should have a similar volume on the DMR TG as other DMR users. Additionally, the sound card's A/D and D/A converter has an optimal range; too high an audio level will cause distortion.

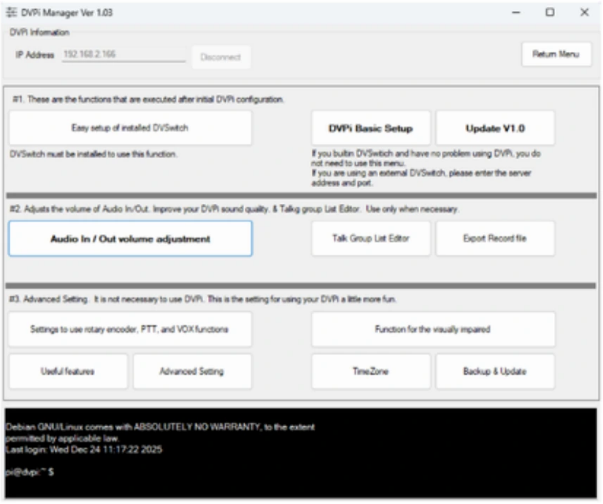
To install DVPi:

- First, download "dvpi_103.zip" and "dvpimanager_103.zip". You may need to disable antivirus if it blocks the download (mine, McAfee, did).
- Use BalenaEtcher (https://etcher.balena.io/) to write the dvpi_103.zip image to an SD card — do not unzip it, BalenaEtcher handles that. I recommend SanDisk Ultra SD cards for the Pi, they are very reliable. A 16 GB card is sufficient.
- Connect keyboard, mouse, monitor, sound card, and internet to the Pi, insert the SD card, and power it on. Once DVPi initializes, you need to install "DV Switch" on the Pi:
  - Click "Menu" and close DVPi.
  - Open "Terminal" from the Pi desktop (if accessing remotely with Putty, user=pi, password=dvpi).

Execute:

```
wget http://dvswitch.org/buster
chmod +x buster
sudo ./buster
sudo apt-get install -y dvswitch
```

After reboot, DVPi should start automatically and be ready to configure using DVPi Manager. This Windows program runs from the folder where it was unzipped. There you can enter your RadioID, Brandmeister password, and location via "Easy setup…", and select the correct time zone.


DVPi Manager Ver 1.03
DVPi Information
IP Address
192.168.2.166
Disconnect
Return Menu
Easy setup of installed DVSwitch
DVPi Basic Setup
Update V1.0
Audio In / Out volume adjustment
Talk Group List Editor
Export Record file
Settings to use rotary encoder, PTT, and VOX functions
Function for the visually impaired
Useful features
Advanced Setting
TimeZone
Backup & Update

#1. These are the functions that are executed after initial DVPi configuration.

DVSwitch must be installed to use this function.

If you builtin DVSwitch and have no problem using DVPi, you do not need to use this menu.
If you are using an external DVSwitch, please enter the server address and port.

#2. Adjusts the volume of Audio In/Out. Improve your DVPi sound quality. & Talkg group List Editor. Use only when necessary.

#3. Advanced Setting. It is not necessary to use DVPi. This is the setting for using your DVPi a little more fun.

```
Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
Last login: Wed Dec 24 11:17:22 2025

pi@dvpi:~ $
```

The KD8CEC pages explain many of the necessary adjustments in DVPi Manager.

For repeater use, the default maximum transmission time of 180 seconds is very short and should be changed in the DVPi code:

```
sudo su
sudo nano /boot/dvpi.ini
[OTHERS]
```

TX_TIMEOUT=180 → change to: TX_TIMEOUT=600 (10 minutes)

Ten minutes exceeds the timeout value of most repeaters. If another person starts talking immediately after the first user releases their PTT, DVPi's VOX may interpret it as a long transmission that exceeds the 180-second limit.

With the timeout increased to 10 minutes, the VOX delay can increase to 1.6 seconds or more in DVPi Manager. This helps prevent the software VOX from activating during long pauses between slowly spoken words.

Since the transceiver's RX squelch tone is used, VOX sensitivity (Mic RMS) can be reduced to 250 or lower to avoid missing the start of softly spoken words. In Manager, make sure that "use low pass filter" is not checked; using DSP is fine.

Another issue was the random disconnection from the talkgroup, showing TG 9 (disconnected). I added our TG as static on the Brandmeister website. The solution was to create a Cron Job to reboot the Pi every day at 3:15 AM. This daily reconnection seems to have resolved the issue.

Cron Job tutorial: https://bc-robotics.com/tutorials/setting-cron-job-raspberry-pi

From the crontab editor:

```
15 3 * * * sudo reboot now
```

This reboots the Pi and DVPi every morning at 3:15 AM. If you're only interested in one TG, you can use the Talk Group List Editor in DVPi Manager to modify the list. I deleted the entries from usertg1.txt and added the repeater TG, changed the title, and saved the list as VE3RAG_TG (you can name it whatever you like).

The DVPi image uses the old Buster OS; my attempts to upgrade always broke the software, so the saying "if it works, don't fix it" applies. There is a noticeable transmission delay of 1 second or more on the network, which can cause "double audio," where the DMR user does not hear the repeater user stop for 1 second, and vice versa.

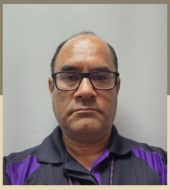
How to access the DMR network:

- Use a DMR transceiver to connect to a TG via a local DMR repeater (usually on UHF).
- Use a DMR transceiver with a hotspot such as Pi-Star MMDVM over the Internet. Pi-Star software:
- Build a DVPi as a DMR transceiver over the Internet. I use a Pi 3B+ with a 3.5-inch display and amplified speaker.
- The simplest option is the Android app DroidStar, with vocoder plugins at
- Monitor talkgroup activity with Hoseline:
- Check DMR activity on the Brandmeister Last Heard page.

For DMR, you need a Radio ID at , a 7-digit number. A 2-digit suffix (ESSID) is added for each device. For the Brandmeister network, register at . Brandmeister Canada:

Confessions of a Delivery Driver

How to Safely Ship and Receive Amateur Radio Equipment



By: Julio Mercado WP4PUX

FT30
FT30
FT-991A
TS-590SG
ICOM
IC-7300
IC-2730A
IC-2730A

I'm a Delivery Driver at FedEx and also a ham radio operator. I've seen it all: collectible radios, huge transceivers, and antennas that look out of this world. Every package has its story, and both shipping and receiving it require care, patience, and a bit of planning. Here, I share practical tips from my experience to ensure your equipment arrives safely and the experience remains exciting.

Protect your equipment as if it were your own

Radios, microphones, and antennas are delicate. I use sturdy boxes, bubble wrap, foam, and dividers so nothing moves. Even small cables and accessories deserve their own protection. This attention to detail ensures that the recipient can open the package without unpleasant surprises and enjoy their equipment from the very first moment.

Choose the right shipping option (when sending or receiving)

If you buy from a store, ask which services they use: standard, express, tracking, or insured shipping. For expensive ham radio equipment, tracking and insurance are essential, even if they cost a bit more. If you buy from another individual, make sure they ship with proper packaging and insurance options. I've seen equipment damaged just because the cheapest, unprotected option was used. Always follow the carrier's instructions to avoid delays.

H
USPS GROUND ADVANTAGE™
0001
BetterSafeRadio
HAZMAT - Surface Transportation Only [redacted]
USPS TRACKING # HAZMAT
[redacted]
9436 2111 0615 [redacted]
Order #175[redacted]
UN3481
For more information, call +1(833)[redacted]

Label and document everything

When shipping, I always write “FRAGILE” and detail the contents. For international shipments, I declare “Ham radio equipment” with the exact value and weight. If you are the buyer, ask for photos of the packaging and confirmation of the declared details. This helps avoid delays, customs issues, and ensures your purchase arrives safely.

Control costs without sacrificing safety

Comparing prices between carriers is helpful, but never sacrifice protection to save a few dollars. Set insurance to the actual value of the equipment, and don’t overload the box. This applies both to sending and receiving: a well-planned shipment protects your investment and keeps the excitement intact.

What NOT to do

Never use services that don’t offer tracking or insurance for valuable equipment. Avoid shipping without proper protection or using ultra-cheap carriers—I’ve seen radios and transceivers arrive damaged just to save a few dollars. Also, never send or accept poorly packed packages: weak cardboard or insufficient padding is a recipe for bumps and unpleasant surprises.

Enjoy the excitement of the package

The best part of my job is seeing the smile of someone receiving their equipment. When you buy a radio or antenna, opening a properly packed box is part of the experience: the thrill of holding your equipment for the first time is almost as exciting as your first contact on the air.
Shipping and receiving ham radio equipment isn’t just logistics—it’s taking care of another ham’s passion. With planning, patience, and protection, every package becomes a safe and memorable experience that keeps the excitement of ham radio alive.

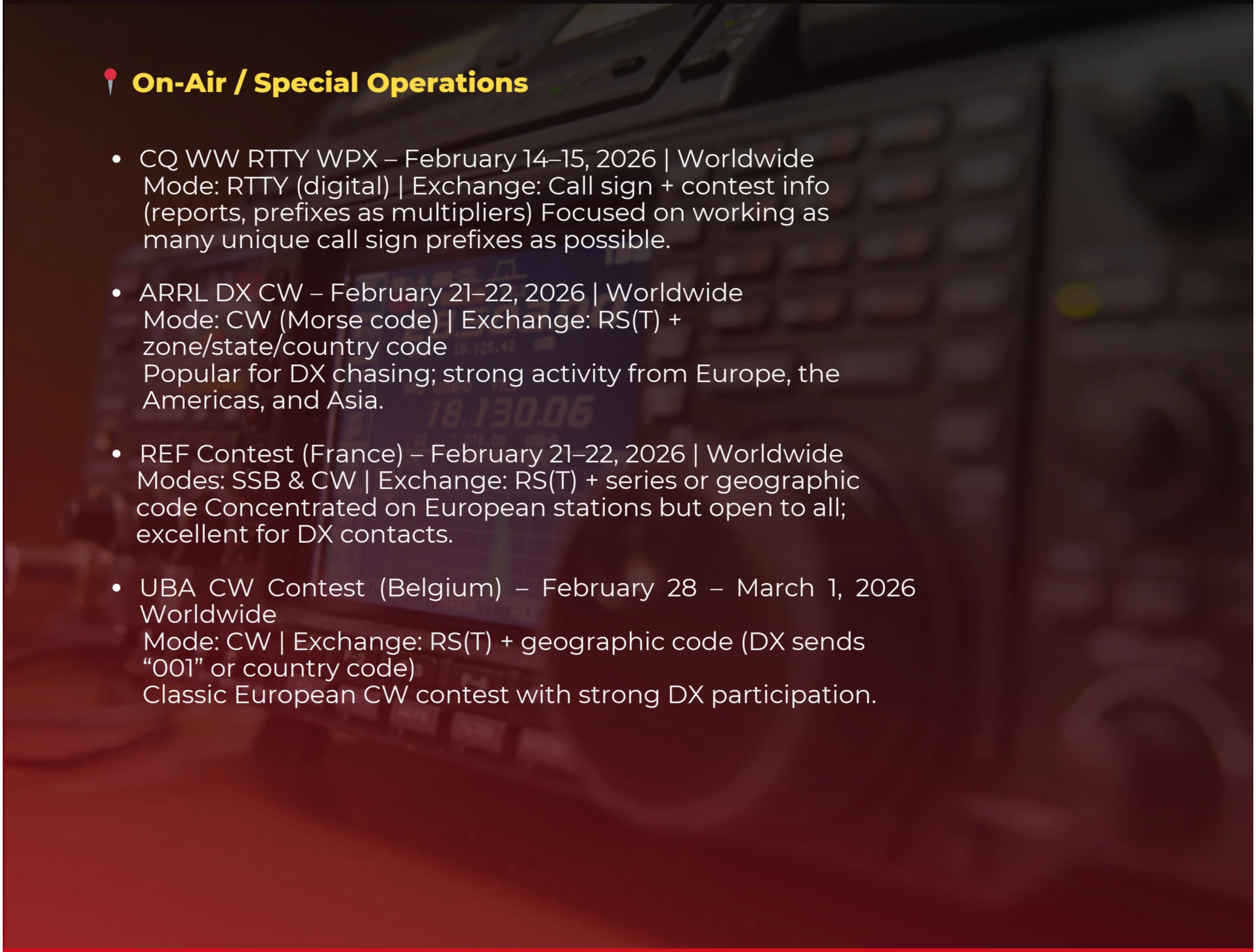
ORDER FREE SUPPLIES
WHEN USED INTERNATIONALLY, AFFIX CUSTOMS DECLARATION
MEDIUM FLAT RATE BOX
FOR DOMESTIC AND INTERNATIONAL USE
PRIORITY MAIL
TRACKED
INSURED

EVENTOS Y ACTIVIDADES PROGRAMADOS EN ENERO 2026

SPECIAL EVENTS

Conventions, Hamfests, and In-Person Events

- Orlando HamCation 2026 – February 13–15, 2026 | Orlando, Florida, USA
- One of the largest and most influential ham radio conventions in the world.
- HAM-CON Vermont State Convention – February 28, 2026 | Colchester, Vermont, USA
- A traditional hamfest featuring vendors, presentations, and awards.
- Orange Hamfest – February 27–28, 2026 | Orange, Texas, USA
- A classic hamfest in Southeast Texas with a long-standing local tradition.



On-Air / Special Operations

- CQ WW RTTY WPX – February 14–15, 2026 | Worldwide
  Mode: RTTY (digital) | Exchange: Call sign + contest info (reports, prefixes as multipliers) Focused on working as many unique call sign prefixes as possible.

- ARRL DX CW – February 21–22, 2026 | Worldwide
  Mode: CW (Morse code) | Exchange: RS(T) + zone/state/country code
  Popular for DX chasing; strong activity from Europe, the Americas, and Asia.

- REF Contest (France) – February 21–22, 2026 | Worldwide
  Modes: SSB & CW | Exchange: RS(T) + series or geographic code Concentrated on European stations but open to all; excellent for DX contacts.

- UBA CW Contest (Belgium) – February 28 – March 1, 2026 Worldwide
  Mode: CW | Exchange: RS(T) + geographic code (DX sends "001" or country code)
  Classic European CW contest with strong DX participation.

DO YOU HAVE A HAM RADIO EVENT AND WANT IT FEATURED IN OUR MAGAZINE?
SEND US THE DETAILS AT INFO@SWRMAGAZINE.ORG AND WE'LL BE HAPPY TO PUBLISH IT.

By: Abimael Padro KP4RY

Connection

On the way to the bakery, but on 40 meters

> **From the handheld to the TS-2000: the data packets travel through the TNC and reach HF all while you're walking.**

There was a time when ham radio just felt different. Not better or worse—just different. I remember being able to walk down to the neighborhood bakery to buy bread, a Kenwood handheld in my hand, and at the same time be talking on 40 meters using my Kenwood TS-2000, which stayed on at home.

Telling it like this sounds complicated. And, in reality, it was complex—but also easy, especially when you know your equipment well and understand what you're doing.

KENWOOD
14.195.00
439.920.00
USB
FM
Black Version
TS-2000
All-mode Multibander
HF/50/144/440MHz
60th Anniversary

Photo by: universal-radio.com

The TS-2000 would quietly operate from the shack while I walked down the sidewalk, responding as if I were sitting right in front of it. The Kenwood handheld did its part, and everything worked naturally.
I didn't feel extraordinary. It was simply one of those things you try, see that it works, and carry on.

How I made it work

What made this "magic" possible was the right combination of equipment and hands-on know-how.

CAUTION
KENWOOD
0906
DATA
1.5~12v
300 mA
RadioShack

The Kenwood handheld had an integrated TNC, which basically converts what you type or speak into small digital data packets. That TNC communicated with the TS-2000 back at home. The TS-2000, in turn, transmitted on HF, on the 40-meter band, using Packet Radio at 300 baud.

The result was that I could move around freely, without needing to be physically in the shack, and still participate in the communication. The handheld acted as a bridge, and the TS-2000 did the heavy lifting of the radio work. Everything was synchronized in a very simple way: audio, PTT, and data—no complicated interfaces or advanced software required. In short: I walked, the handheld did its job, the TS-2000 transmitted, and the band responded. It seemed complicated, but it was easy at the same time.

Back then, Packet Radio still had a presence, even on HF. It wasn't fast, but it was reliable. At 300 baud, everything moved slowly, but every transmission made sense. There was no rush, no automation—just wait, listen, and respond. Nowadays, we're used to other things: modern digital modes, software that does almost everything for us. But in those days, every connection had its own merit. I'd get to the bakery, order my bread, and while waiting, I'd hear the reply on the handheld sometimes noisy, sometimes clear. Just normal HF stuff. No one around me knew I was talking to someone far away, and it didn't need to.

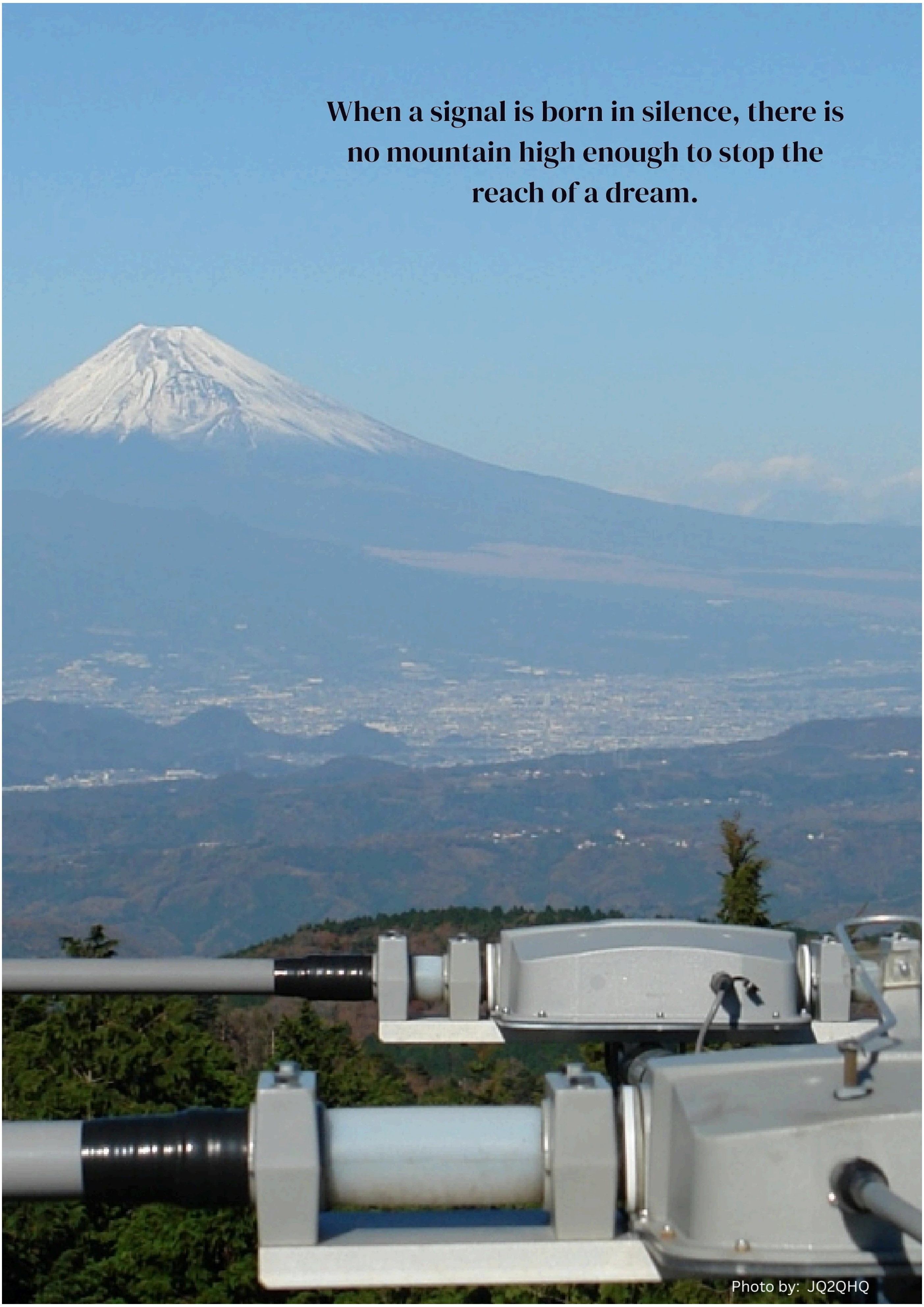
Looking back now, you realize that ham radio has always been like this: it seems complicated from the outside, but it's easy once you understand it. It's not just about the equipment—it's about how you use it.

I was just going to buy bread.
The radio came with me.

KENWOOD
146.970
TH-K20 FM TRANSCEIVER

KENWOOD
USB
ANT 1
PTT
PHONES
MIC

KENWOOD
TS-2000
14.000.00
144.000.00
USB
FM



When a signal is born in silence, there is
no mountain high enough to stop the
reach of a dream.

Photo by: JQ2QHQ

IS THE ICOM IC-756PRO STILL RELEVANT IN 2026?

ICOM
IC-756PROIII
POWER
TRANSMIT
PHONES
ELEC-KEY
MIC
TUNER
MONITOR
NB
NR
AF-RF/SQL
BAL-NR
SPECTRUM SCOPE
DSP FILTER SET
F-1
F-2
F-3
F-4
F-5
SSB
CW/RTTY
AM/FM
FILTER
EXIT/SET
TWIN PBT
RIT/⊿TX

Robust and reliable construction

Photo by: Icom

Physical panel: a favorite of ‘old school’ operators

By: SWR Editorial Team

A reliable classic can offer great value if you prioritize ruggedness and traditional operation, but modern SDR radios provide clear advantages in digital modes and ergonomics.

The Icom IC-756PRO series marked a significant milestone in the history of HF transceivers for ham radio. It spans three main generations: the IC-756PRO, the IC-756PROII, and the more advanced IC-756PROIII. Although all were introduced in the 2000s, even today many veteran operators and enthusiasts find solid reasons to keep using them.

A bit of history and evolution

The IC-756PRO series spans three generations of HF/6 m transceivers: the original IC-756PRO, which introduced 32-bit DSP, a TFT display, and advanced features such as digital filtering, RTTY, and an automatic tuner; the IC-756PROII, which improved selectivity, sensitivity, and digital filtering, becoming a favorite for DX and contesting; and the IC-756PROIII, the most advanced version, incorporating enhancements from the IC-7800, low-noise preamplifiers, and an optimized architecture that boosts reception in challenging conditions.

Why are they still relevant today?

1..Solid Performance for Classic HF

Despite their age, the entire IC-756PRO series offers:

- Full coverage of HF bands plus 6 m, ideal for SSB, CW, and classic digital modes.
- Advanced DSP for its time, with multiple filters and noise controls.
- Color displays and real-time spectrum (PROII and PROIII), still useful for monitoring bands.

Classic Performance, Modern Passion.

- Full HF + 6m coverage
- Programmable channel memories
- Split operation (separate RX/TX frequencies)
- Line noise reduction
- Dual VFO for simultaneous monitoring
- Adjustable power control
- SWR and power meters
- Optional CW/SSB filters

Although they don't have native SDR like more recent radios (e.g., IC-7300), their performance remains competitive for traditional HF operation.

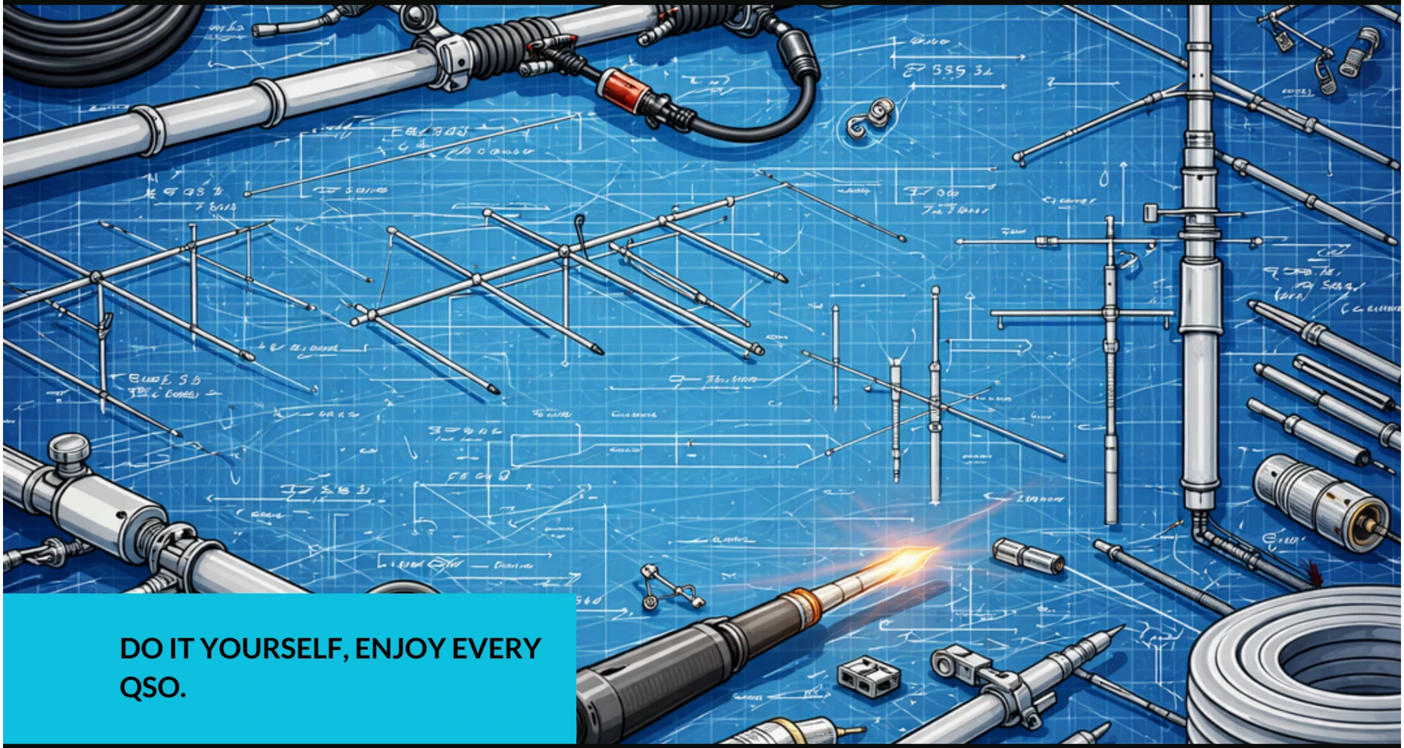
2. Integration with Modern Software

With external interfaces (e.g., CAT/CI-V cables plus audio interfaces), these radios can be used with popular digital mode programs like WSJT-X, PSK31, or FT8, connecting them to a PC for digital transmission and reception. This extends their useful life in today's ham radio environment.

The IC-756PRO series remains relevant today for several reasons. Thanks to external interfaces such as CAT/CI-V cables and audio adapters, these radios can connect to a PC and operate modern digital modes like FT8, PSK31, or WSJT-X, extending their useful life in today's ham radio environment. Additionally, they are extremely robust and durable, with solid construction that withstands continuous use, and well maintained used units are still available, allowing operators on a budget to access a full featured HF transceiver. Many hams also appreciate the tactile controls with physical knobs and buttons, as well as the full front panel a feature that many modern radios have replaced with digital or touchscreen interfaces.

Conclusion and Limitations

However, the series does have limitations compared to newer radios: they are not native SDRs, so they do not provide direct I/Q signals to a PC and rely on external interfaces; their displays and ergonomics are dated; and while the DSP and strong-signal handling are good, they do not reach the level of modern SDR radios. Current models like the IC-7300 integrate more advanced DSP, native USB audio, and remote control capabilities, offering additional advantages for digital modes and software-assisted operation.



DO IT YOURSELF, ENJOY EVERY QSO.

Square Loop Antenna for 144/430 MHz

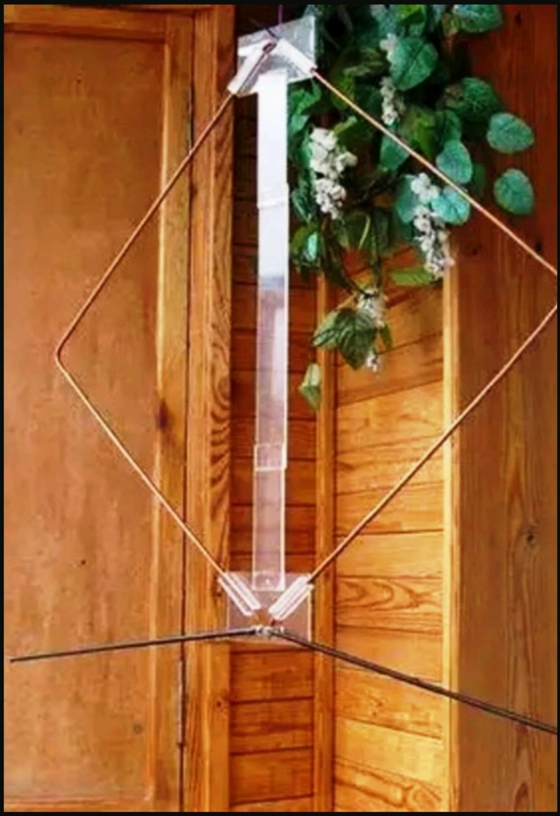
Square Loop Antenna for 144/430 MHz

By: D.Prabakaran VU3DXR

Understanding the Concept of a Dual-Band Loop

At the heart of this square loop antenna is a square loop with each side measuring 510 mm. The loop's perimeter approaches a full wavelength at 144 MHz, making it naturally resonant for the 2-meter band. Loop antennas at VHF are well known for their stable impedance, quiet reception, and ability to minimize local electrical noise, especially indoors.

To operate at 430 MHz, the loop becomes electrically much longer, approaching nearly three wavelengths. At this point, UHF radiation is dominated by the two lower short elements, each 435 mm long and spaced at a 60° angle. These act as phase elements and provide the proper impedance transformation for 70 cm operation. This combination allows the antenna to work seamlessly on both bands without requiring traps or stubs.

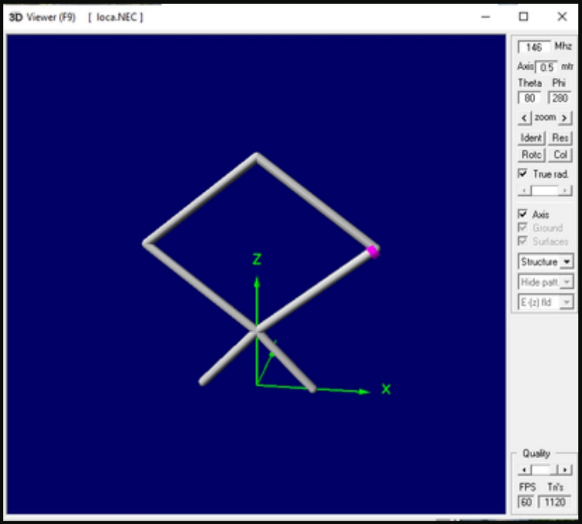


READY TO TRANSMIT!

Square Loop Antenna: Construction Details and Dimensions

The square loop antenna can be built using copper wire, copper tubing, or even aluminum rods. The recommended wire thickness for the loop is approximately 6.7 mm, which helps stabilize impedance and improves broadband response. The ends of the loop antenna should be spaced exactly 5 mm at the feed point to maintain proper electrical tuning.

The lower radiating elements are equally important and should be cut to 435 mm. The 60° spacing helps match the UHF impedance to the feed line while also establishing the correct directional pattern. The central support can be made from PVC tubing or any non-conductive material. Ferrite rings are installed at the feed point to act as a 1:1 choke balun, preventing common-mode currents from flowing back onto the coaxial shield.



3D Viewer (F9) [loca.NEC]

146 Mhz

Axis 0.5 mtr

Theta 80 Phi 280

☑ True rad.

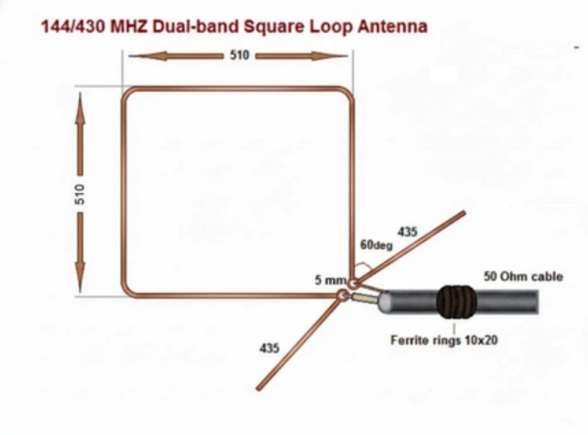
☑ Axis

☑ Ground

☑ Surfaces

Structure

FPS 60 Tri's 1120



Feed Line and Coupling

A standard 50-ohm coaxial cable connects directly to the feed point, where the loop ends and the UHF elements join. It is recommended to use a 1:1 balun with 50BЧ2 ferrite rings measuring 10×20 mm. This improves SWR and prevents pattern distortion, especially when the antenna is used indoors or near walls.

Square Loop Antenna: Performance and Radiation Characteristics

On the 144 MHz band, the square loop operates as a full-wave resonant antenna, providing a uniform, nearly omnidirectional radiation pattern. This makes it ideal for repeater access, simplex communication, and general VHF operation. The loop design also significantly reduces artificial noise, delivering cleaner audio and more stable signals compared to a typical vertical antenna.

At 430 MHz, the short radiators create a slightly directional, higher-gain pattern, with efficient radiation and low SWR across most of the 70 cm band. Users typically report gains between 4 and 5 dBi, making it competitive with many commercial dual-band antennas. Thanks to its compact design, the antenna performs exceptionally well indoors, on apartment balconies, and in attics.

One of the greatest advantages of this dual-band loop is its simplicity. It requires no traps, coils, or complex matching sections.

SECURE MOUNTING = BETTER PERFORMANCE

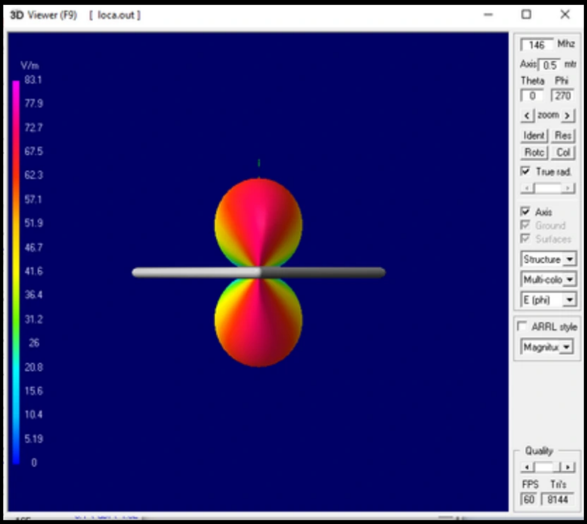
Each dimension is directly related to the operating wavelength, ensuring predictable results. The loop design naturally rejects local electrical noise, making it an excellent choice for urban operators.

Suggested Alternatives for Ferrite Rings

If you don’t have 50ВЧ2 ferrite rings (10×20 mm), you can use any high-permeability ferrite suitable for a VHF/UHF balun.

Good substitutes (widely available worldwide):

- Mix 43 ferrite rings (most common)
    - Sizes: FT50-43, FT82-43, FT114-43, FT140-43
    - Works well for 144–430 MHz
    - Readily available on Amazon and RF stores
- Mix 61 ferrite rings (better for UHF)
    - More effective at 300–500 MHz
    - Ideal for the 70 cm band
    - Sizes: FT82-61, FT114-61
- Fair-Rite Snap-On Chokes (easy to install)
    - Mix 43 or Mix 61
    - Clamp style, just snap onto coax
    - Use 2 or 3 pieces on the coax cable
    - Perfect for users who don’t want to remove connectors



3D Viewer (F9) [loca.out]

146 Mhz

Axis 0.5 mtr

Theta 0 Phi 270

☑ True rad.

☑ Axis

☑ Ground

☑ Surfaces

Structure

Multi-colo

E (phi)

☐ ARRL style

Magnitu

FPS 60 Tri's 8144

Conclusion

Building an antenna with your own hands is much more than a technical exercise: it is an extension of the true spirit of ham radio. Every measurement, every cut, and every adjustment connects us with the fundamentals of radio, teaches us patience, and rewards us with the satisfaction of hearing and transmitting signals through something we created ourselves.

The dual-band square loop antenna demonstrates that, with accessible materials and shared knowledge, it is possible to achieve efficient, economical, and fully functional solutions. Beyond performance on VHF and UHF, projects like this strengthen our skills, spark curiosity, and keep alive the experimental essence that defines a good ham operator.
In the end, it’s not just about having an antenna on the mast it’s about the experience, the learning, and the pride of saying: “this signal comes from something I built myself.” 73.

The resilience of amateur radio in the digital era

Why amateur radio operators remain essential

By: Israel Cabrera KP4AX

Introduction

After working surrounded by one of the largest ears humanity has ever built the Arecibo Observatory, you learn a fundamental truth: signals never lie, but they also never forgive. Radio demands respect. And perhaps that's why, every time I hear that amateur radio is "a thing of the past," I can't help but smile with a bit of irony.
Amateur radio has been alive for more than a hundred years not because it resisted change, but because it adapted better than many far younger technologies. In the midst of the internet age, cloud computing, and smartphones, amateur radio operators remain relevant, useful, and, in critical moments, absolutely indispensable.

When everything fails, radio remains

The importance of amateur radio becomes clear in the worst moments. Hurricanes, earthquakes, floods when cell towers fall and the internet disappears, radio communications stay on the air. This isn't romanticism; it's reality.

Organized amateur radio networks such as ARES, RACES, and their local equivalents have historically been among the first to restore communication links after natural disasters. With portable stations, batteries, generators, or solar panels, radio amateurs can operate completely independent of commercial infrastructure. That autonomy is their greatest strength. Radio doesn't ask permission to exist.

Much more than talking on the radio

Amateur radio is not just about communication; it is about continuous learning. For many people, it has been a gateway to electronics, engineering, and telecommunications. Long before video tutorials existed, radio amateurs were already learning through trial, error, and curiosity.
There is also a human element that is difficult to replicate on any modern social network. An international QSO is not just a contact—it is a conversation between cultures, a genuine exchange between people separated by thousands of kilometers, yet connected by a radio signal.

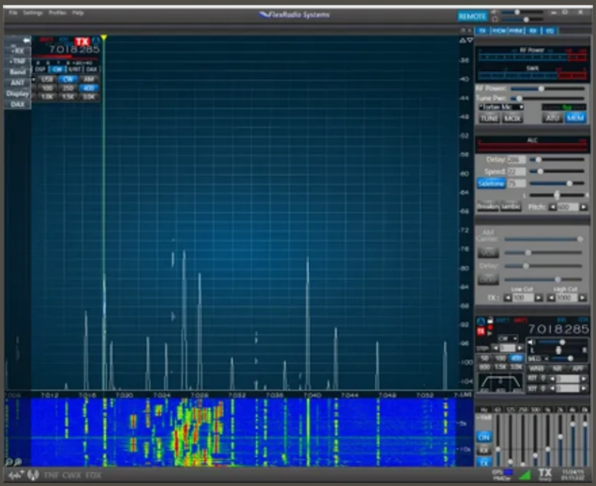
Photo by: sciencephoto.com

Amateur radio also evolves

Contrary to popular belief, amateur radio did not remain anchored in the past. Today it coexists with cutting-edge technologies:

- Digital modes such as FT8, FT4, and JS8Call enable contacts under extreme conditions, when the signal is barely distinguishable from the noise.
- SDR (Software Defined Radio) has transformed the way operators work, allowing real-time visualization and analysis of the spectrum using accessible equipment.
- Hybrid networks like DMR, EchoLink, and AllStar combine RF and the internet, extending reach without losing the essence of radio.
- Amateur satellites and CubeSats open a direct door to space, sparking the interest of new generations.

All of this proves that amateur radio does not compete with modern technology it integrates it.



Best Practices for Today’s Amateur Radio Operator

Being a radio amateur today means more than just turning on a radio:

- Training for emergencies and participating in nets and drills.
- Prioritizing efficient antennas over higher transmit power.
- Maintain the station organized, documented, and ready to operate.
- Respect regulations, operating procedures, and the shared spectrum.
- Share knowledge, because radio grows when it is shared.
- Amateur radio is not measured only in contacts, but in preparation and service.

The Future: Attract, Educate, and Serve

For amateur radio to remain alive and relevant, it must connect with young people. Projects involving IoT, microcontrollers, modern contests, portable operation, and educational workshops serve as natural bridges to new generations of makers and students.

When a young person discovers that they can communicate, program, and experiment with radio to solve real-world problems, radio stops feeling outdated and becomes fascinating.

Photo by: onallbands.com

Conclusion

Amateur radio is neither a relic nor a nostalgic pastime. It is a living discipline that combines public service, technical experimentation, and a global community. When conventional communications fail, radio is still there quiet but steadfast waiting for someone to pick up the microphone.

As long as there are radio amateurs willing to learn, share, and serve, radio will remain essential… even in the digital age.

YAESU
850.000

Where silence is immense,
our signals find their way.

Photo by: reddit.com

IS IT TIME TO REPLACE YOUR COAXIAL CABLE?

UNDERSTANDING THE LIFESPAN AND EFFECTS OF AGING IN COAXIAL CABLE

By: SWR Editorial Team

In every ham radio station, the humble coaxial cable plays a crucial role. It's the silent conduit that carries your signals to and from the antenna, but like all components, it doesn't last forever. Knowing the average lifespan of coaxial cable, the warning signs of aging, and how old cable affects performance can help you avoid unnecessary signal loss and keep your station operating efficiently.

How long does coaxial cable last?

The average lifespan of coaxial cable in ham radio use typically ranges from 10 to 20 years, although this depends heavily on several factors:

- Type and quality of cable: High-end cables like LMR-400 or Times Microwave variants generally last longer than budget options like RG-58.
- Installation conditions: Cables exposed to UV rays, extreme temperatures, water ingress, or physical stress degrade faster.
- Connector sealing and strain relief: Poorly installed or unsealed connectors allow moisture in, accelerating deterioration.

Outdoor cables, especially those in direct sunlight or subjected to frequent bending (such as rotor cables), may last only 5 to 10 years if not properly protected.

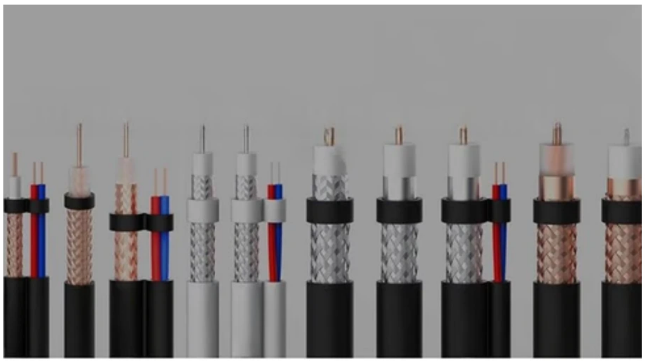
YOTENKO
RG58
Radio
Antenna
Cable
Handheld
Two Way
Coax
Extension

Symptoms of a Failing Coaxial Cable

Like old tires or batteries, coaxial cable rarely fails suddenly. Watch for these warning signs:

- Rising SWR: If your standing wave ratio gradually increases without changes to the antenna, the coax may be the culprit.
- Signal loss: You might notice weaker received signals or lower-than-usual transmission reports.
- Intermittent operation: Crackling audio, unstable output power, or fluctuating SWR can indicate problems with the shield or center conductor.
- Physical damage: Cracks in the outer jacket, green corrosion on connectors, or brittleness are obvious signs.

A simple test—replacing the cable with a known-good jumper—can confirm whether the coax is the problem.



Why Replacing It Matters

An aged or damaged coaxial cable can introduce significant losses, especially at higher frequencies. Even small line losses can mean several decibels less power reaching your antenna or a weaker signal arriving at your receiver.

Worse, if the coax shield is degraded, RF leakage can occur, causing interference in your shack or to nearby electronic devices. Water intrusion into the braid or dielectric can also lead to corrosion, creating a resistive path that worsens over time.

Impact on SWR and Station Performance

A coaxial cable with moderate loss can mask a high SWR at the antenna (due to attenuation of the reflected signal), but it does not eliminate the mismatch it just hides it. This illusion may make the operator believe everything is fine, while a significant portion of power is actually lost in the line. This is especially critical for QRP stations and VHF/UHF operation, where every decibel counts.

Conclusion

A coaxial cable is not a “set it and forget it” component. If your cable is over a decade old especially if it has been outdoors it may be time to inspect, test, or replace it. Doing so will not only restore your station’s full performance but also prevent issues from arising at the most inconvenient times.

Regular inspections, proper installation, and investing in high-quality coax will help ensure your signals travel far, both on transmit and receive.

Have you checked your coax this year? If not, now is a great time to inspect your lines—and perhaps give your station a measurable boost.

HAM RADIO ZONE

Ham Radio Slang and Codes

Ham radio has its own "secret language" that allows operators to communicate quickly and clearly. Beyond the famous QSO (contact) or DX (distant station), hams use very useful codes and abbreviations:

- RST (Readability, Strength, Tone) → Signal report, given as three numbers, e.g., 5/9/9 (5 = readability, 9 = strength, 9 = tone).
- CQ → General call to any available station.
- 73 → Best regards and good wishes.
- 88 → Hugs and kisses, used among close radio friends.
- QSL → Contact confirmation, either verbal or via QSL card.
- QRZ? → "Who is calling me?"
- QTH → Operator's location.
- OM / YL / XYL → OM = male operator; YL = young lady; XYL = operator's wife.
- QRP → Low-power transmission.
- QRO → High-power transmission.

Knowing these codes not only helps you follow conversations better but also connects you to the rich traditions of ham radio. Practicing the slang will make you sound like a seasoned operator on the air!

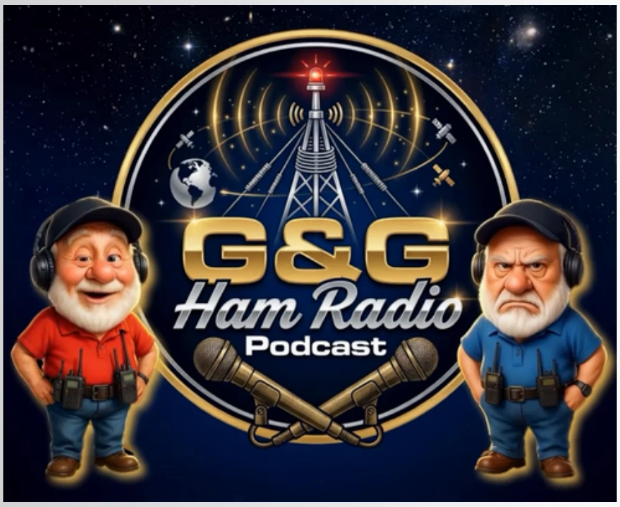
Pro Tip: Memorize the most common codes and use them in your QSOs; your fellow hams will appreciate it.

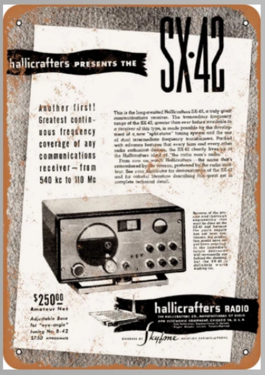
Curious New Arrival: A Comedy Podcast for Ham Radio Enthusiasts!

In January 2026, a new comedy podcast centered on ham radio was launched, designed to make the amateur radio community more fun and approachable. The idea behind the show is to tackle the well-known "gatekeeping problem" (when veteran operators make newcomers feel intimidated) using humor and education instead of heavy technical debates.

This initiative comes amid a surge of newly licensed hams who find the jargon and culture of radio a bit overwhelming. The podcast aims to welcome more people into the hobby in a friendly and entertaining way.

🎧 www.youtube.com/@HamRadioGizmos

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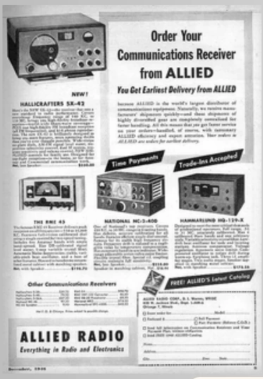
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En 1947, a receiver like the Hallicrafters SX-42 was advertised for around $250—equivalent to about $3,768 today. Back then, ham radio was a hobby reserved for those who could invest significant money and technical dedication.

Today, thanks to technological advances, more affordable and accessible equipment has democratized the hobby, allowing more people to enter ham radio without losing the spirit of experimentation that defined those early pioneers.

Technology changes, but the passion for the airwaves endures.

HAM RADIO ZONE

The Magic of Radio

I'm Delia (Del) Flores XE1DEL, and a few days ago I had the opportunity to take part in Parks on the Air (POTA) activations—support your parks—with my amateur radio equipment. Alongside XE1BLA, we set up all the gear, antenna, and radio.

Tuning the frequencies and calling other stations filled me with excitement because that's when the magic of radio begins. We made contact with stations in Mexico, the United States, Canada, Peru, and Puerto Rico. This confirmed to me that radio is a powerful means of communication, capable of connecting people across the world.

I want to thank all the stations that took the time to talk with us—their kindness and passion for radio made this activity unforgettable. I cherish each contact because they always leave a special greeting and wish us luck with the activation.

The activity was a success: we made solid contacts and experimented with the End Feed Ultimax 100 antenna and the Icom IC-7300 MK2, achieving excellent results. I hope to hear you on my next Mexican park activation. This is all possible thanks to you. 73.

SWR

Photo by: K6EI